RACHEL MARSHALL GOETZ

VISUAL AIDS

for the PUBLIC SERVICE

Public Administration Service

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Visual Aids

for the Public Service

By Rachel Marshall Goetz

Illustrations by Cissie Peltz

PUBLIC ADMINISTRATION SERVICE

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Preface

VISUAL AIDS are being used increasingly to supplement the printed and spoken word as a means of conveying ideas and information. A major impetus for this increased use of visual aids was the experience of the armed forces training programs during World War II. Today the armed services employ films at the rate of seventy million training hours annually. Industry and education have also come to use films, filmstrips, and graphics with increasing skill and effectiveness. But, with some notable exceptions, public administration—federal, state, and local—has not employed these new tools of communication to the same extent for the provision of better training of public servants, for the improvement of public relations, and for greater citizen understanding of the problems of modern government.

As an experiment in the improved use of these tools of communication in the public service, Public Administration Clearing House conducted a two-year pilot project. With the cooperation of associations of public officials and agencies—primarily those headquartered at 1313 East 60th Street, Chicago, Illinois—it was able to bring to the attention of hundreds of officials and agencies the existence of films and other media in their fields and to transmit some practical recommendations in the effective use of these visual aids.

The pilot project, which has now been completed, was conducted by Rachel Marshall Goetz. It demonstrated among other things the need for a continuing center constantly supplying information on visual aids for public officials and for citizens' groups.

In the concluding stages of the project Mrs. Goetz prepared this manual of *Visual Aids for the Public Service* which Public Administration Clearing House is pleased to sponsor. It is our hope that the manual will aid government officials, as well as members of citizens' organizations, in presenting more effectively the processes of democratic government and in improving the techniques for the training of its servants.

HERBERT EMMERICH, *Director*

Public Administration Clearing House

Contents

Let's Define Our Terms: A Glossary of Visual Aids

BLACK OR WHITE BOARDS:
Slate or composition boards that will take colored or white chalk.

BULLETIN BOARDS:
Display areas of cork, celotex, fabric, or other composition materials on which objects can be mounted.

CELLS OR TRANSPARENCIES:
Mounted acetate slides (usually 3½″ x 4″ but occasionally as small as 2″ x 2″) for use in projectors.

EASEL CHARTS:
Charts mounted on easels, desk size or larger.

FELTBOARD: (Sometimes called flannel board or wool board.) Composition board covered with cotton or wool felt to which lightweight objects backed with sandpaper, abrasive, or felted materials will stick without visible means of support.

FLASH CARDS:
Brief messages on poster board cards (usually 10″ x 12″) momentarily displayed to emphasize a point in a presentation.

FLIP CHARTS: Charts fastened together at the top, mounted on an easel so that they can be flipped over as the presentation progresses.

KINESCOPE: A television program that has been recorded on film and reprojected.

LIVE TELEVISION:
Telecast where the audience sees the picture of an actual program or event as it occurs.

MOCK-UP: Three-dimensional scale replica.

MONTAGE: Pattern of illustrations or printed items which are superimposed one on the other.

OPAQUE PROJECTOR:

A projector which will project blown-up images of a printed page, maps, photographs, or other opaque materials.

OVERHEAD PROJECTOR:

A projector where the image is projected from a transparency or slide back over the operator's head as he stands facing his audience.

OVERLAYS: One transparency laid over another; used to build up presentations.

PEGBOARD: Composition board perforated at regular intervals (usually ¾") into which pegs supporting display materials are fitted.

PLATTER: Phonographic disc, which may be either a recording or a transcription, depending on the process by which the sound is transferred to the record.

POSTERS: Simple illustrated messages, generally mounted on cardboard, legible at some distance. Posters vary greatly in size; some are smaller than the car cards that abound in street cars, buses, and commuter trains; others are as large as highway billboards.

P.A.: Public address system, using a microphone and amplifier. Most motion-picture projectors are equipped with P.A. jacks or plug-ins.

SLIDEFILM OR FILM STRIP:

Two-inch x 2" slides in series re-photographed on a strip of film.

SOUND MOTION-PICTURE PROJECTORS:

These may be either 16 millimeter or 35 millimeter, depending on the size of each picture or "frame." Projectors now appearing on the market can reproduce sound from magnetic tape which can be stripped directly on the film.

SOUND-SLIDE FILM:

Slide film accompanied by a commentary on a record.

STRIP TEASE POSTER:

A device whereby successive portions of the presentation are revealed piecemeal.

TAPE RECORDER:

Machine which records sound on tape and reproduces it.

WIRE RECORDER:

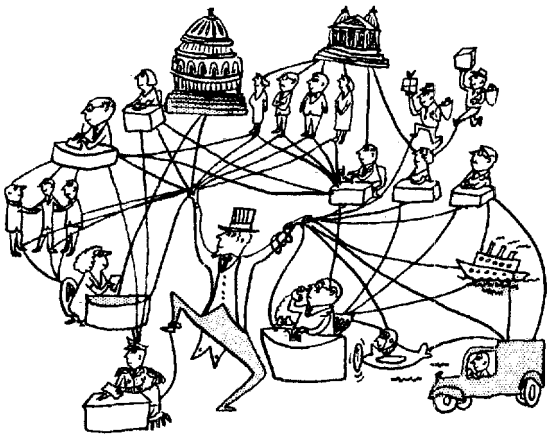
Machine which records sound on wire and reproduces it.

I. New Tools for Public Management

Visual aids are here to stay! They have demonstrated that they can add a new dimension to the communications process. Officials at every level of government are learning to use them with telling effect. This manual is designed to **help the public servant**—any public servant—**surmount the obstacles** that bar the way to this new field of communication.

Visual aids and government's three-way communication job

Communication is essential in democratic government. The process works three ways simultaneously. Citizens must communicate their wishes, their suggestions, and their criticisms to government, if it is to function as an instrumentality of the people. The wishes, suggestions, and criticisms must be communicated throughout the governmental organization in the form of policies, program objectives, and operating standards. At the same time, government must translate itself to citizens in order to enlist their participation and cooperation. The result of this three-way process is the molding of government into an efficient institution that can perform its functions with a minimum of public cost and a maximum of public satisfaction.



Public administration, like industrial management, is aware of the supreme importance of communication to efficient operation. Whether lines of authority are simple and direct, flowing easily from level to level, or whether they interlace staff functionaries and interdepartmental committees, **communication channels are the life lines** that tie the whole structure together. When communication breaks down, the entire structure is imperiled.

Communication plays its part in the everyday operations of every government department; its importance is not limited to the levels of high policy decision. It works its purposes through oral as well as written communications and even takes such forms as a lifted eyebrow or a curled lip. The field of human relations, now in the forefront of administrative thinking, focuses attention on the blockages to communication created by the vagaries of human nature and aggravated by poor administrative practices.

Visual aids are good tools of communication because—potentially—they are able to break through such blockages. They **provide understandable, orderly, and attractive ways of presenting facts and their relationships.**

The advertisers pioneered the audio-visual field. Hot on their heels have come the educators, the businessmen, and, more recently, churches and trade unions. No self-respecting school system is now without its visual-aids experts. Hard-

headed business management has used visuals to the tune of 150,000 films. Churches own tens of thousands of projectors. A number of the big unions have well-developed film programs. The galloping growth of television is the latest testimonial to the potentialities of audio-visual aids.

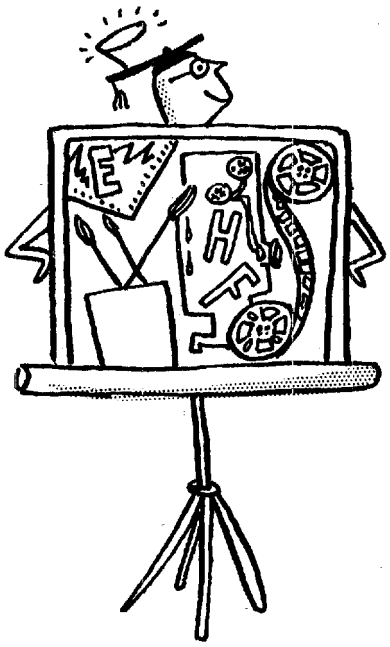
Government has trailed in the audio-visual field for various reasons:

TAXPAYERS' ALLERGY

to new items in government budgets, public suspicion of government "propaganda," bureaucratic inertia in big governments, and limited resources in little ones. In spite of these difficulties, visual aids are being used with increasing effectiveness at every level of government. They are on their way to becoming fully respected tools of public management.

World War II did much to stimulate the use of visuals. The need to speed military training and defense production forced experimentation with every sort of training aid. Audio-visual techniques came through with flying colors and dug themselves deep into defense training and communications procedures. They have

spread into the other branches of federal government and won their diploma of recognition in state and local government. Audio-visual aids now serve government as:

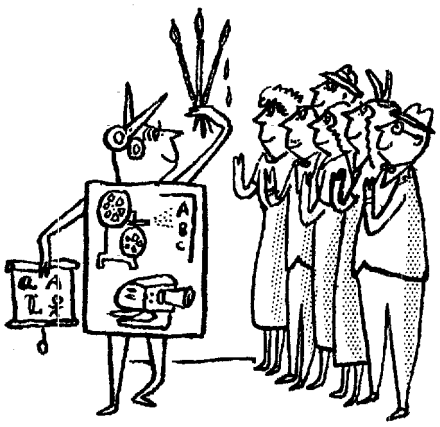


aids to public information programs

tools for reporting and administrative communication

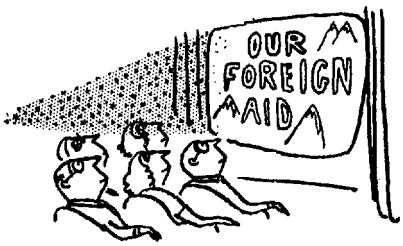
in-service training aids

Visual aids meet the public



Every agency meets the public in a variety of ways. Visual aids can help those encounters become more memorable and more rewarding. If an agency provides direct public service, it can step up the usefulness of those services by using such visuals as maps, road signs, instructional flyers, and leaflets.

Every agency on occasion reports on over-all operations or special projects. It may use annual or periodic reports, budget proposals, or other statements. Visual aids can help attract and hold favorable interest, convey facts, relate them significantly, and focus attention on issues needing decision.

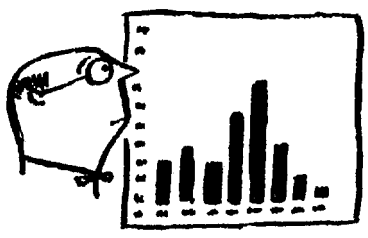


Often it is part of the job of government to **help the public understand** the nature of the problems with which it expects government to deal. These problems in their sweep cover the wide fields of foreign and domestic policy, bearing sometimes on substantive issues and sometimes on considerations of methodology. Motion pictures, television and radio programs, as well as the more static charts, posters, displays, and publications, can be used—indeed have been used—to build public understanding.

Frequently the success of a government operation depends on **enlisting active citizen cooperation.** Audio-visual aids can go beyond the unadorned printed word in sparking public interest and motivating citizen action. Whether the issue is compliance with regulations or voluntary cooperation with programs in the public interest—defense bond drives, civilian defense programs, traffic safety campaigns—**these new communication tools can sharpen the public attention** and trigger citizen response.

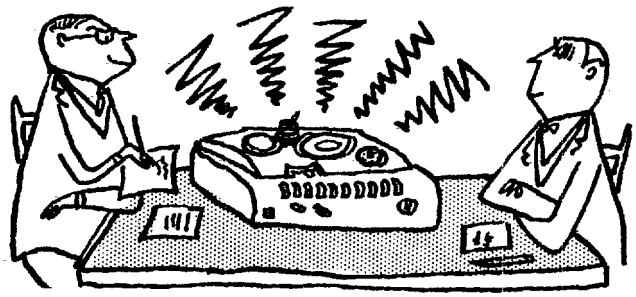
Visual aids in service

Within the administrative framework of government, visual aids have a significant, though perhaps less spectacular contribution to make. **Charts and diagrams are helpful reporting tools** in recording new data, in highlighting meaningful relationships, and in crystallizing conclusions and giving them added significance.



At all levels of administration, there are mountains of application blanks, memos, and reports whose usefulness can be heightened by concern for visual impact.

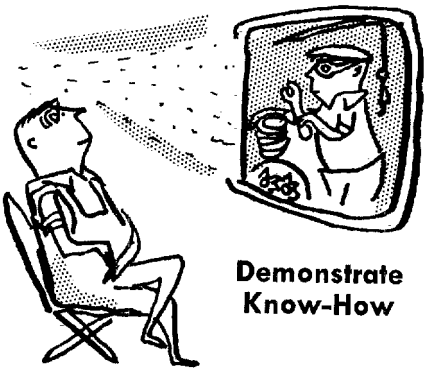
AT THE AUDIO LEVEL



tape and wire recorders can preserve the spirit as well as the facts of key meetings. Problems of interagency communication also present important challenges to these new media. Graphics, special layouts, and typography can help bridge the gulfs that separate departments, even within the same agency.

Visual aids rise to the zenith of their usefulness in **in-service training.** Here all stops are pulled. Visuals are used to:

Provide Information



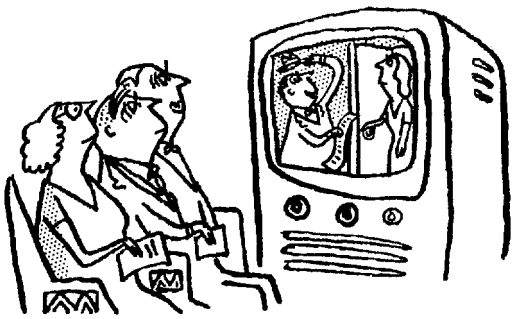
Demonstrate Know-How

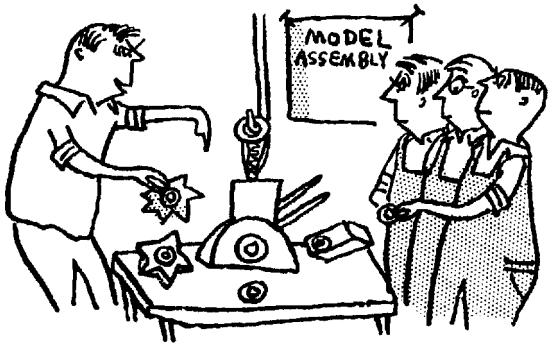
Make People Want to Learn

Training starts with the orientation of new employees. By the use of visual aids, the office manual and organization charts can be made to highlight instructions, increase employee understanding, and arouse program enthusiasm.

Audio-visual techniques may be used to tie orientation in with special training, as they are in the Bureau of Labor Statistics, or they may be directed toward creating a favorable working climate. The Federal Personnel Council's truth-about-government campaign uses television, motion pictures, and graphic presentations to increase the prestige of the public service with employees and the public.

Supervisory training specialists enlist elaborate audio-visual support in a number of agencies, including the National Production Authority, the Bureau of Labor Statistics, and the Federal Civil Defense Administration. **Interviewers** for the 1950 Census **were trained with** the use of **television and** an assortment of **film presentations.** The Bureau of Labor Statistics used a felt-board presentation to add a new dimension to its interviewer training program.

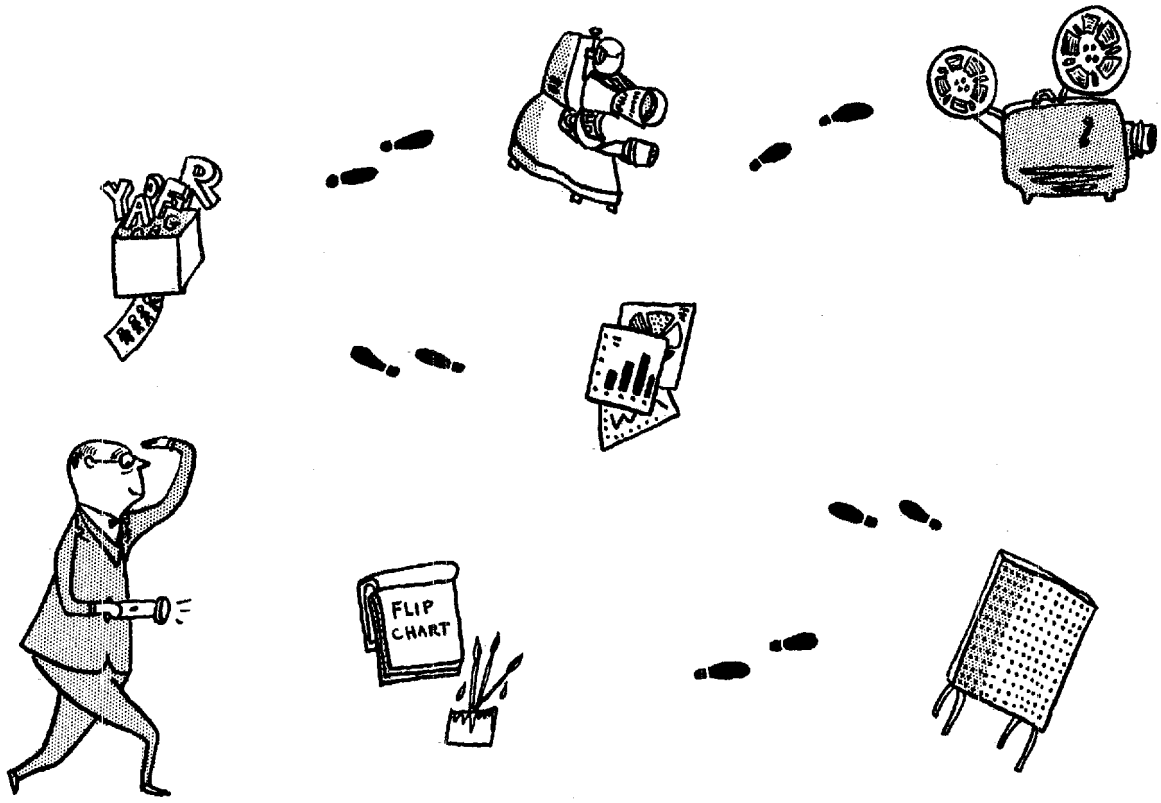




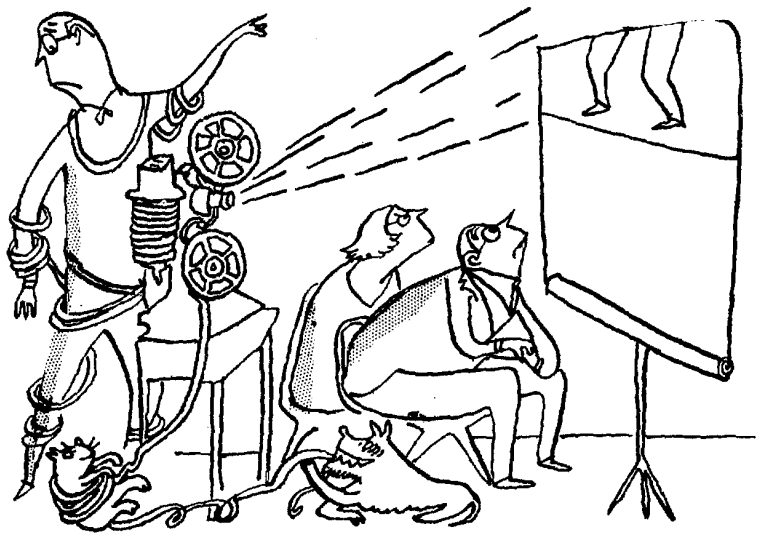
Manual skills are widely taught with the assistance of mock-ups and models, training films, and illustrated manuals. Some of the most favorable reports concerning the impact of visual aids on learning have come out of the skill-training experience of the armed forces.

The potential usefulness of audio-visual aids in government is virtually unlimited. The controlling factors are the enthusiasm and ingenuity of the user. Often he is needlessly deterred by misconceptions concerning the difficulty of using or the expense of producing visual aids. **Anyone** with little or no budgetary leeway **can** learn to **use** the simpler of **these new communication tools** to make the rest of his job easier.

This manual charts a visual aids course which any willing public servant can follow.



II. Visual-Aids Know-How: Uncommon Common Sense



Practical problems loom forbiddingly large in the mind of every new user of visual aids. The plunge once taken, however, the enterprising individual will discover that visuals can become increasingly useful tools of public management. The initiate will find himself in possession of a rich collection of devices that can make a real contribution to public employee training and to the taxpayer's understanding of government activities and services.

People generally assume that the use of visual aids presupposes a great artistic talent or a lush art budget. Nothing could be farther from the truth, although either or both are naturally assets. A little imagination and/or the temperament of a "doodler" can work wonders. **What public servant,** ridden by harassments, budgetary or otherwise, **does not take out his frustrations like this?**

The first steps are easy

Stick figures, such as that drawn by our harassed "doodler," are a long way up the visual-aids scale. To start, it is quite enough to be able to use a blackboard and chalk or paper and crayon to:

LIST ideas or a series of points. This is an outline.

EMPHASIZE key points or relationships by underlining, spacing, capitalization, or color. This could be an organization chart.

COMPARE in terms of size, space, or time. This is a chart.

ILLUSTRATE to make your presentation "stick." This could be pictorial graphics.

Any device that appeals to eye or ear or both with more effect than just words is an audio-visual aid.

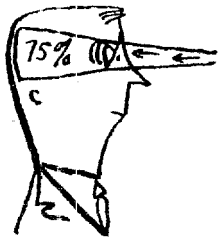
A good visual can **SET THE STAGE AND FOCUS ATTENTION.**

It can **REINFORCE WORDS** that might otherwise fall on deaf ears.

It can **HOLD ATTENTION** by the use of color, by arrangement, and, best of all, by motion.

It can **CONVEY ATTITUDES** as well as facts.

It can **TOUCH THE WELLSPRINGS OF HUMAN EMOTIONS.** Cartoons, comic strips, and posters—as well as motion pictures—can use a human situation to put an idea across.



Visuals actually **speed up learning.** According to army studies, people get 75 per cent of their impressions through their eyes and retain half again as much of what they see as of what they hear.

Big or little, simple or complex, homemade or expensively packaged, visual aids are devices for:

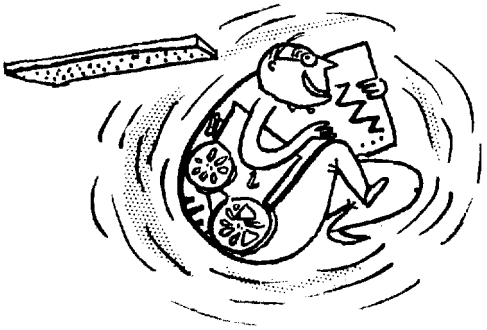
AROUSING ATTENTION AND HOLDING IT

CONVEYING INFORMATION

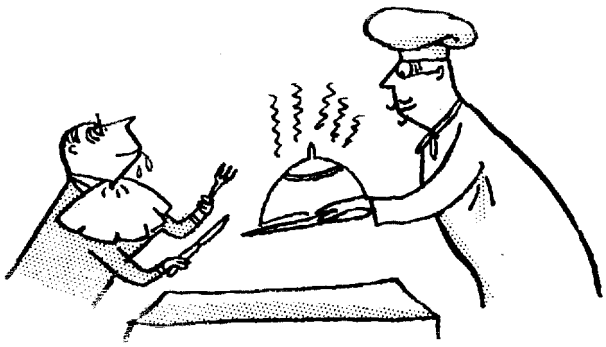
ORGANIZING IDEAS

MOTIVATING ACTION

Like any other skill, effective use of audio-visual aids takes a bit of doing. There are always hurdles to take before any new technique can be used with facility, but **visual-aids know-how snowballs rapidly.** The worst hurdles are actually illusory. The awesome costs of promotional advertising have seemed—but only seemed—to take visual aids out of the reach of the small operator. The fact is that a core of easily acquired know-how can accomplish much even on the slimmest budgets.



The "open sesame" to successful use of visual aids in support for any program is constant awareness of the **value of attractive packaging** as contrasted with the dogged and flat-footed presentation. The business of **making information palatable, digestible, and memorable** carries no price tag. One can indeed learn much—for free—from the commercial promoters, who bolster cold logic with appealing supports. The advertisers engineer impact by skillful use of color, arrangement, illustration, emotionally toned words, and other powerful symbols, but none of these is copyrighted property.



Purveyors of ideas of every sort can profit by an awareness of the potentialities of such presentation ideas as:

SPACE

ARRANGEMENT

EMPHASIS

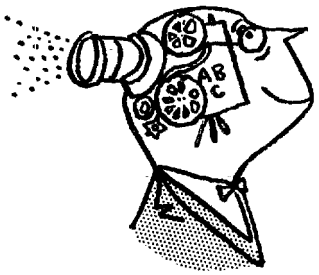
TYPE STYLES

COLOR

ILLUSTRATION

The first four take time and imagination rather than money, but even color and illustration are not per se costly, though they may, of course, be very costly indeed. It is usually just as easy and cheap to use colored paper or ink as black and white. Generally, though not always, the use of color does increase the effectiveness of the visual. Nor is it necessary to be an artist to illustrate your message. **Cut-outs** from advertisements and other free materials or enlarged photographs **can be used with satisfactory** and almost professional **effects.**

Even where color and illustration appear impracticable, good spacing, careful arrangement, and the imaginative use of type styles can do much to step up the impact of straight text. The important thing is never to forget that the **appearance** of a report, a poster, or a chart **can be an extra asset in putting any message across.**



When visuals become a state of mind, the effectiveness of every publication and every display will be enormously increased and the courage necessary for their production will not be missing.

Titles can make or break

In any visual presentation, no matter what its form, good titling is a priceless jewel. Titles should always be:

Brief—two lines (preferably one).

Accurate—saying no more and no less than intended (and, to be sure, this is difficult).

Arresting—the emotional punch of a visual can be heightened by the use of appealing word symbols to reinforce the message.

Leave little or nothing to the viewer's imagination, and especially don't leave him puzzled and confused. Amateur visuals frequently misfire because they fail to be self-explaining units. Written or oral descriptions can amplify a visual's message and can point up certain of its conclusions, but they should not be required to make it intelligible. **Before it "jells" try out the visual on someone** who has not been in on the planning.

The first requirement of all titling is **legibility** in terms of the particular circumstances in which the visual is to be used. Legibility is not simply a function of size. It has to do with spacing between letters, their thickness or thinness, spacing between lines, and arrangement of the different parts that make up the whole. It has, in fact, to do with **the total effect of attractiveness and clean-cutness which will make an audience want to grasp the message.** Legibility also depends on color. White and black read well; orange and black provide sharp contrast. Elaborate color schemes, however attractive, may reduce legibility and may therefore require larger letters.

Very small changes have an enormous effect on the legibility, attractiveness, and impact of the final product. Titles can be larger or smaller; type styles can be bolder or more delicate, shorter or taller, thinner or fatter. Colors can be harsher or more pleasant; borders can be broader or narrower; spacing can be gracious, congested, or blank.

FRAMING OR MOUNTING CAN MAKE THE VISUAL MORE NOTICEABLE

Lettering: the cornerstone of a good visual

Lettering can also make or break any visual presentation. If it appears likely that a lot of lettering is to be done, a brush or the speedball pen, used by someone who knows how, is fast, cheap, and flexible. Most draftsmen are good letterers, and art students are well trained in freehand lettering.

It is also possible to acquire the art with the aid of a good manual. *Visual Aids: Handbook for Trainers,* International Harvester's Education and Training Division, spells out the technique of lettering in such detail that anyone with patience can learn. Any library should be able to uncover equally good instructions.

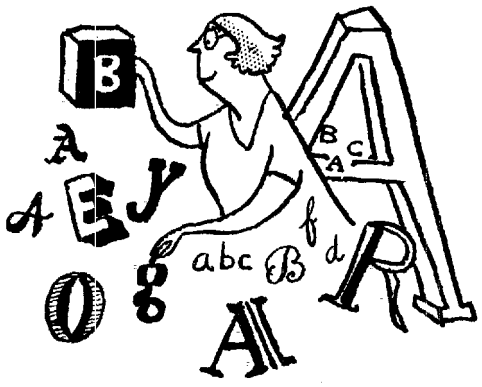
Lettering brushes are inexpensive and come in a wide range of sizes. Speedball pens come in sizes up to ¼ inch and cost about 10¢ per point; an assortment of points will cost about $1.25. India ink or lettering ink works best with both pen and brush. Brushes, speedball pens, lettering ink, and lettering manuals can be obtained at any artists' supply store and at most office-supply stores and stationers.

Good effects can be had by tracing suitable letters from newspaper and magazine advertisements. Letter stencils also serve many a useful purpose. Stencils come in a wide variety of sizes and styles. Cardboard stencils, like children use, are available in toy and ten-cent stores. Much more elaborate and durable plastic ruler-like stencils can be obtained in local art stores. The cardboard stencil lettering sets, including both letters and numbers, come in 1½", 1", ¾", and ½" heights and are generally available from 15¢ up to $1.00 per set.

An ingenious variation of the stencil is the Varigraph. This gadget will produce letters in a variety of styles and sizes (.075 inch to .725 inch). It has adjustments that permit any one of a number of styles to be made taller or shorter, fatter or thinner. Such devices, however, are relatively expensive—costing about $100—and are not, therefore, practicable for small or occasional visual-aids operations.

Prefabricated or cut-out letters offer an easy solution to a considerable number of lettering problems. Unless you start to figure out what your time is worth, the use of prefabricated letters is apt to be more expensive than drawing the letters yourself or cutting them out of magazines or other publications. The difficulty of cutting letters from published materials will be recognized immediately by anyone who has tried it: the problem of locating a sufficient number of the right letters of the desired style and size.

All sorts of prefabricated letters that can be glued into place are now on the market. There are three-dimensional letters that come in cork, composition, cardboard, and felt. Flat paper letters come in many weights of paper, in all standard colors, in black and white, silver and gold. There are also letters of shiny mystic material (like mystic tape) which theoretically will stick without glue to roughish surfaces. They are less durable than cardboard letters, and are more expensive than plain cut-outs, but they can frequently be used more than once. Two-inch mystic letters cost about $4.50 per set of 100.



Most prefabricated letters come in a wide selection of sizes, ranging from ½ inch to 9 inches. They are not too easy to locate, but art supply stores, display houses, educational supply or office-supply houses may be able to help you. Sources for letters include:

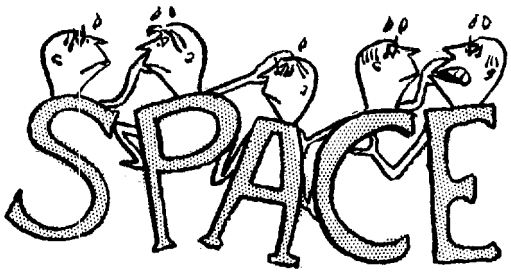
Mitten's Letters, Redland, California

Harry Mich Company, 216 West Ontario Street, Chicago, Illinois
(mystic and other letters)

Redikut Letter Company,
6519 West Boulevard, Inglewood, California

Tablet and Ticket Company,
1021 West Adams Street, Chicago, Illinois

With a supply of ready-built letters on hand, anyone can produce workmanlike posters, displays, and charts with relative ease and on short notice. Letter storage boxes, with compartments for each letter, are of great practical use in working with, as well as in storing, cut-out letters. It will save time and money to use a few standard sizes and a limited range of colors.



Good spacing is essential to satisfying lettering results. One experienced user suggests that fat letters should be no more than four times the width of a capital "I," that spacing between letters should be one "I" width, and between words four "I" widths.

Why good design pays

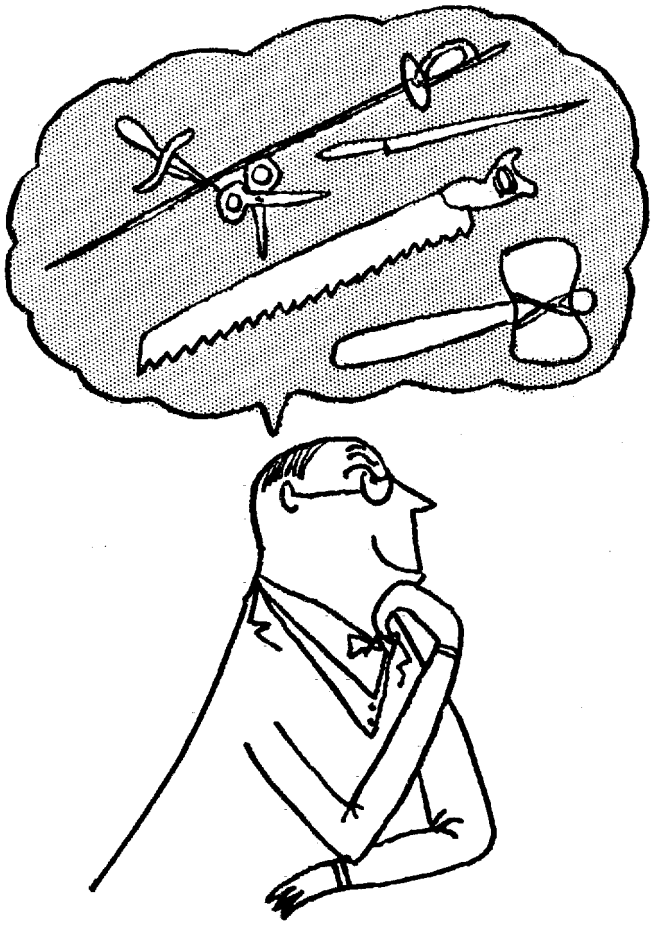
The qualities of arrangement, spacing, color, and over-all attractiveness are **visual elements** that are used to convey the message. Together they **build the design** of the visual. These design elements are to be found in every kind of visual, whether it is a graphic presentation, diagram, organization chart, poster, bulletin board, or other display. Expertness in combining them attractively accumulates rapidly, since experience in any of these fields is broadly transferable from one kind of visual to another.

Good design is functional, not arty. Design can come high, but it does not have to if the person responsible for the visual will take the trouble to train his own eye. This he can do by the simple expedient of **becoming aware of visuals**

whenever he encounters them, and by giving himself practice in finding out what kind of presentation he likes and why. Almost anyone can produce an attractive visual if he pushes the elements of visualization around until he has achieved the best possible arrangement of what he has to work with.

Clarity is the key

GOOD
VISUALS
TAKE
SHARP
THINKING



Visual aids cannot be used successfully unless the user knows exactly what he wants to say and to whom he wants to say it. The central idea must be simplified until the bones of its meaning are laid bare. Subtleties must take second place; they must not obscure the central message. Check and recheck to be sure that all nonessentials are pared away and that the remaining bony structure of the idea is well enough articulated to carry the weight of the message. Then figure out how to express and reinforce that idea visually. This kind of streamlining calls for sharp thinking, which is absolutely essential if a visual is to read well, easily, and convincingly.

Check list of what a good visual should be

A GOOD VISUAL SHOULD BE CLEAR

It should be accurate.

Its message should be simple, direct, and pointed.

It should not try to say too much.

It should be legible in terms of design, size, contrast and color.

A GOOD VISUAL SHOULD BE COMPELLING

It should attract attention.

It should spark audience reaction.

Its message should stick; color, design, symbolism, phraseology, all can contribute elements of indelibility.

IT SHOULD BE EASY TO USE

It should be selected for the person who is to use it, in light of his experience and his surroundings.

A GOOD VISUAL SHOULD BE APPROPRIATE

Its form should reflect its purpose.

Its form should be closely tied to its content.

Its form should be determined by its use, taking into consideration probable number of showings, proposed method of reproduction, and available equipment.

Its form should reflect the character of the organization using it.

A GOOD VISUAL MUST BE WORTH WHAT IT COSTS

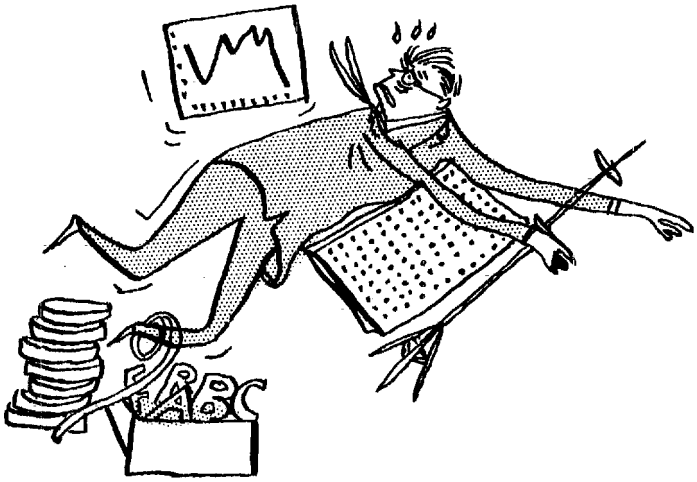
It should fit the budget, both of time and money.

It should be produced as economically as possible; this presupposes knowledge of the different media and their costs.

It should produce the desired results. The most painful costs are the costs of false starts; careful planning and familiarity with the media can practically eliminate these.

Words of caution

Don't expect a visual to do something that the particular device is not able to do. This is the point at which **haste really makes waste.**



Visual aids are TOOLS, not magic.

No audio-visual device can stand alone—not even the most elaborate ad man's dream can perform miracles.

No visual can take the place of practice in acquiring a manual skill.

None can produce synthetic motivation.

Visual aids offer no magic formula. Badly used, they can be distracting, confusing, deceptively simple, cumbersome, or disproportionately expensive.

Properly used, they can become valued tools for learning.

Any visual, to be effective, **must be aimed at a particular audience for a particular purpose.** This means that the user has to be sure exactly what

his purpose is; and determining this is in itself one of the very valuable dividends that come through the systematic use of visual aids.

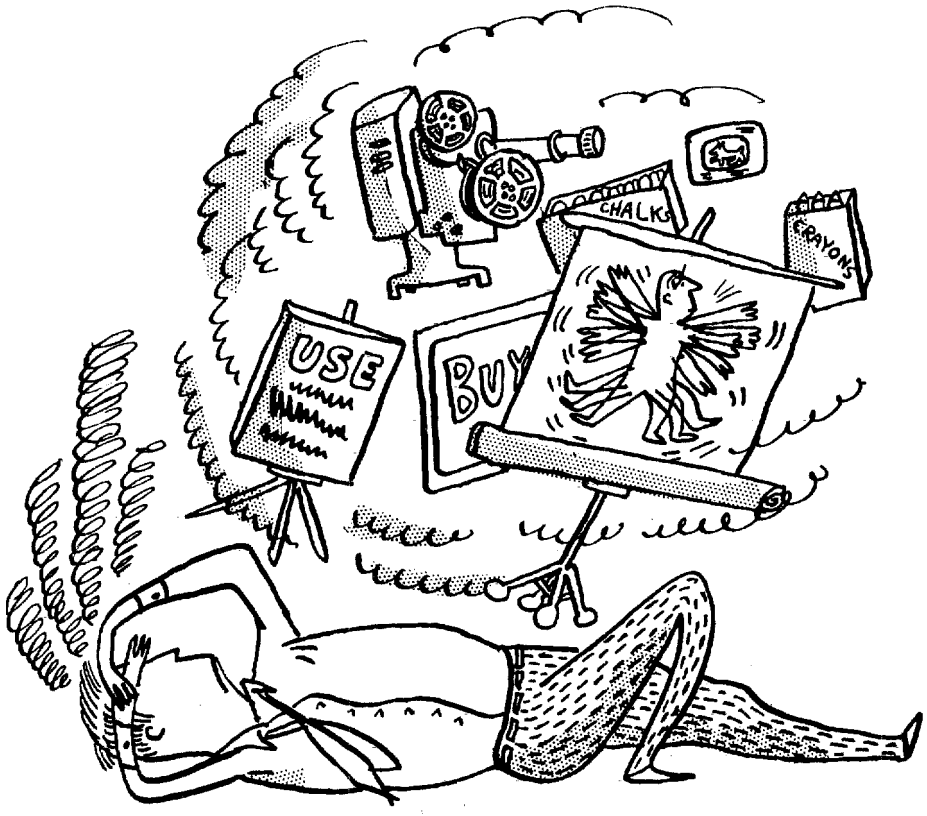
The business of trying to decide what visual to use, where and when, starts with these questions:

What are you trying to get across? To whom?

What can you hope to accomplish in your particular situation—taking into consideration such very practical matters as time, space, money, and background?

Only after putting oneself in this state of preparation does it make sense to try to settle for any particular device. Plans and tools have to be tied very firmly to realities. This is the point at which the problems of planning, or acquiring know-

how and of buying equipment begin to swirl dizzily about the neophyte. This is the point where eagerness to use the new techniques may evaporate in a wave of weariness. **This phase should be endured lest a fog of discouragement black out a truly amazing array of communication tools.**



It will prove heartening to get a foretaste of things to come from visuals about visuals. The following films, although directed toward the schoolroom situation, have useful lessons for all would-be users of visual aids.

Accent on Learning. 16mm, sound, black and white, 30 minutes. Designed to acquaint teachers at the college and university level with audio-visual techniques presently being used by teachers at Ohio State University. Sponsored by the Audio-Visual Materials Committee of the university. Audio-Visual Center, Indiana University, Bloomington, Indiana. Rental $4.50.

Instructional Films—The New Way to Greater Education. 16mm, sound, black and white, 15-minute and 25-minute versions. Demonstrates how audio-visual teaching saves time in presenting

complex ideas. The importance of proper selection, integration, and administration of an educational film program under an audio-visual director is also stressed. Coronet Films, Coronet Building, Chicago 1, Illinois. Price: 15 minutes, $25; 25 minutes, $50. Available on free loan.

Sight and Sound. 16mm, sound, black and white, 11 minutes, 1949. Shows the value of audio-visual aids and stresses their value in education, using examples of classroom activity. Canadian National Film Board, 1270 Avenue of the Americas, New York 20, New York. Rental $1.50.

New Tools for Learning. 16mm, sound, black and white, 18 minutes, 1949. Demonstrates new and better ways of using films in a schoolroom situation. Produced in cooperation with the Audio-Visual Materials Center, University of Chicago. Encyclopaedia Britannica Films, 1150 Wilmette Avenue, Wilmette, Illinois. Rental $4.50.

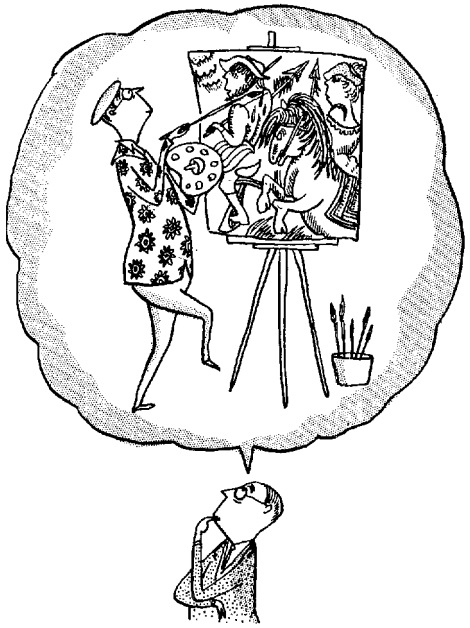
Audio Visual Aids to Learning. 16mm, sound, black and white, 11 minutes, 1951. How an eighth-grade teacher uses audio-visual materials to enrich a study unit on Japan. Designed for use in occupied areas. United World Films, Inc., 1445 Park Avenue, New York, New York. Sale price $14.97.

The standard educator's textbooks are: **Preparation and Use of Audio Visual Aids,** by K. B. Haas and H. O. Packer, Prentice-Hall, Inc., New York, 1950, $4.65; and **Audio Visual Methods in Teaching,** by Dale Edgar, Dryden Press, New York, 1946, $4.25.

Boiled down and capsulated, there is much in this new field of communications that can be put to immediate use in every governmental office.

III. Tips on Displays

The easiest start in the visual-aids field is with displays; the display visual is also one of the most broadly useful. Every agency and every department of every agency uses or could use periodic displays. There is always literature to be spotlighted, directions to be posted, reports to be made, teaching to be done.



Displays, posters, and mounted charts are so useful that, **except for the hurdle, "We have no artist," they would be used much oftener than they are.** The fact is, however, that without an artist anywhere on the premises useful displays—even impressive displays—are completely practicable.

A display is, quite simply, **any compact, purposeful arrangement of materials designed to focus attention on some range of information or area of activity.** It is the easiest kind of visual to develop without professional services, because it can generally be put together from pre-existing materials.

Symbols, models, photographs, cut-outs, or publications, well mounted and made attractive by judicious use of color, and tied together by intelligible titling, can do wonders for small dollar outlay. Of course, any display involves planning time costs.

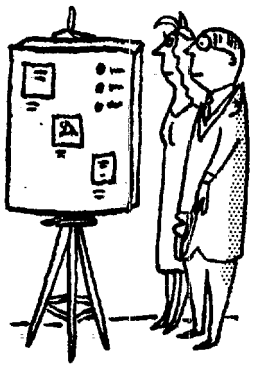
Good displays in ten easy steps

* **Decide what the display is to do—for whom.**
* **Plan where it is to be used.** Determine size, considering matters of legibility, lighting, and appearance.
* **Collect your materials.**
* **Select a theme and a *title*.** Make it simple; stick to one or at most two ideas.
* **Plan schematic arrangements;** first things should hit the eye first. Consider size, color, and contrast.
* **Keep the display uncluttered.** Give it balance and interest. Give it unity by means of arrangement, connecting lines, or color repetition.
* **Use color** and more color, *but not unless you can use it well.*
* **Have the display ready well in advance**—completely ready if possible.
* **Keep it in good condition.** Don't let it become shabby, disorganized, or out of date.
* **Take it down when its job is done.**

Ohio State University has produced an excellent color filmstrip setting forth practical display principles:

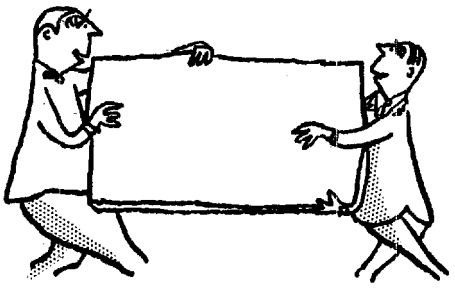
How to Keep Your Bulletin Board Alive, available with mimeo release for $2.50 from the Teaching Aids Laboratory, Bureau of Educational Research, Ohio State University, Columbus.

The simplest display is an arrangement of objects, publications, or what have you, on a table or desk surface. Table-top displays have at least the merit of practicality since card tables and desk tops are generally available. They have certain disadvantages, however. Most of the items making up the display cannot be seen from any distance and are eclipsed by even a small crowd. Moreover, it seems that people cannot resist the temptation to pick up and disarrange displayed materials, with the result that any prearranged pattern soon becomes meaningless. **Also there is considerable danger of losing the books,** pamphlets, or other objects.



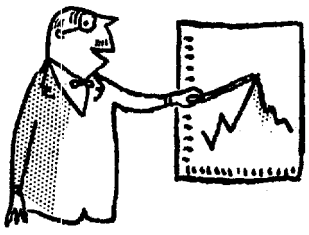
A better bet, more visible, more impressive, less likely to be disturbed—and using less floor space—**is a display mounted on a wall, a bulletin board, or an easel.** Such displays should be arranged at a legible height (2½ or 3 feet off the floor and not more than 6 or 7 feet over-all, unless they are to be the backdrop in a large hall).

Display boards and backing



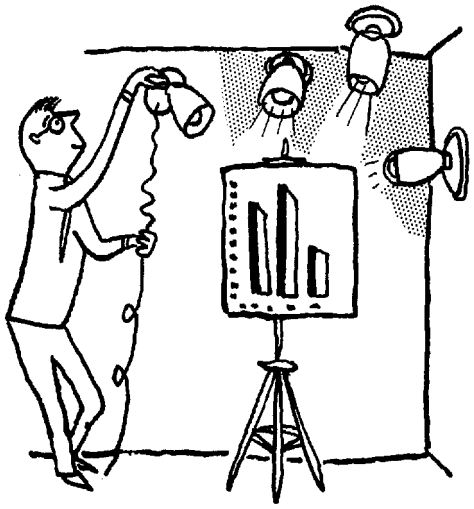
The first requirement for an effective display is a background which focuses attention and provides an organizational framework for the materials to be presented. Any surface that makes possible attractive contrast and to which objects can be easily attached will serve the purpose.

Fabric backgrounds such as denim, burlap, and felt are satisfactory for pinning up sheets of paper, pamphlets, or other lightweight objects. A fabric provides a textured quality and generally looks much more opulent than it really is. Display houses and department stores have all sorts of backdrop materials that will stand alone. There are also felted papers in an array of strong and subtle colors. They look like velvet and are very useful for background or trimmings.



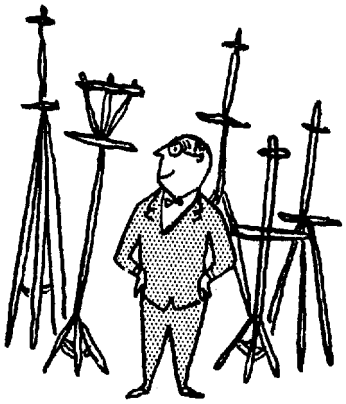
A pointer is a great help when a commentary is to accompany an exhibit. It achieves emphasis by focusing audience attention and can be used without turning one's back to the audience and without blocking out part of the message. It is much more definite and dignified than a finger-point. Classroom pointers are generally available, but a band leader's small baton, costing approximately 35¢, is easier to store and just as pointed.

Permanent display areas deserve good color, framing, and special attention to lighting. Daylight is cheapest, but inexpensive bullet spotlights are not difficult to rig up. Many commercial display boards have their own lighting fixtures. Since most store-made bulletin boards and display boards are made of cork or composition boarding, they can usually be painted.



Putting the lowly easel to work

To hold temporary or even permanent display boards, various sorts of inexpensive easels are quite suitable. With a cache of eight cheap wooden easels ($2.25 apiece) impressive room-size exhibits have been developed.



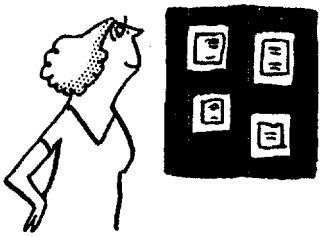
There are few gadgets that have more all-round usefulness than an easel. It is portable, adaptable, and storable. It can be used with equal effect in simple or in elaborate presentations. It holds displays at legible heights in convenient, commanding, or unobtrusive positions as desired. Most hotels will loan easels for use under their own roofs.

Easels can be as simple and unpretentious as three sticks of stained balsa wood held together by screw bolts and equipped with a screw-on shelf, or as elaborate as ornamental custom-designed aluminum structures with all sorts of trick gadgets. All display houses and art stores carry easels. It is even possible to rent them in many cities.

Another species of easel that is extremely useful is the desk easel. With its assistance, a series of **flash cards** (poster boards with simple messages written large) can build up a point-by-point visual outline, or emphasize key ideas. Desk easels, if sturdy enough, can also hold fair-sized charts, posters, pamphlets, and books, any or all of which can be used to add visual reinforcement to a verbal presentation. Sheet music holders will do very well for this purpose. Charts between poster board covers, spiral bound at the top, will stand alone.

Mounting printed material

Probably **the most common subjects for display** in government circles **are publications** and other printed materials. These come in all sizes and shapes. Usually they are grimly businesslike in appearance, for few printing budgets will allow for anything but the cheapest reproduction. Chances are, therefore, that most of the raw materials for visuals for training courses, and even for public information programs, are likely to be black and white mimeographed, planographed, or printed without illustration. Solid pages may be interspersed occasionally with simple charts and tables. All **such materials can be displayed to advantage** and with real dignity **on black poster boards.**



Practically every homemade visual starts with poster board. This useful material comes in a variety of weights and almost every conceivable color, black and white, and even gold, silver, and copper. Poster boards usually come in sizes 22 inches by 28 inches or 28 inches by 44 inches. These retail from 15¢ up. The bigger the display, the heavier the boarding that is needed so that the display will not buckle under its own weight.

Glue is the most permanent adhesive; rubber cement is the easiest to use—since the excess will rub off most surfaces without smearing. Black ten-cent-store elastic ½ inch wide stapled around a display board will hold large sheets in place without damage, or the material itself may be stapled to the board. Thumbtacks of the inconspicuous black or white variety or boldly colored map tacks can also be used.

Four-foot by six-foot display boards have proved to be of the size most useful for displaying publications. These need 3-inch letters for the titles if the message is to carry in a large hall, and 2-inch letters in most rooms. If closer inspection is invited, the subtitles may be smaller, but preferably not less than ¾ inch.

On black backgrounds white prefabricated cardboard or felt letters are very striking. The most widely useful combination is 2-inch black prefabricated letters mounted for contrast on strips of white cardboard 4 inches or 5 inches wide.

It is an easy matter to introduce color and texture into the simplest display by the use of colored letters and small colored felt circles, squares, and triangles, which, incidentally, come prefabricated. Construction paper, which comes in a multitude of colors and costs only a few cents a sheet, makes effective mountings.

It pays to spend a good deal of time moving the printed or other materials around until an arrangement emerges that is interesting but does not appear cluttered or confused.

One learns rapidly to appreciate

THE SOOTHING EFFECT OF JUST PLAIN SPACE

and to provide generous borders—at least 4 inches and preferably more—and ample area between displayed items.

Three-dimensional effects, whenever practical, add much interest. Three-dimensional letters are a first step. These also come prefabricated in cork, cardboard, and plastic. Books and other items standing in front of a display are also easily arranged; so are standing cut-outs—illustrations mounted on poster-board models. **Working models and dioramas**—three dimensional miniature scenes—**are most effective attention-getters.**

It is important that **displays in groups** should be tied together, either in form or color or arrangement, so that they look as if they belong together. Otherwise the whole will look disorganized and cluttered. Even with very mixed subject matter, the use of the same color background, although it be simply black or white, will produce a unified, dignified, and attractive effect.

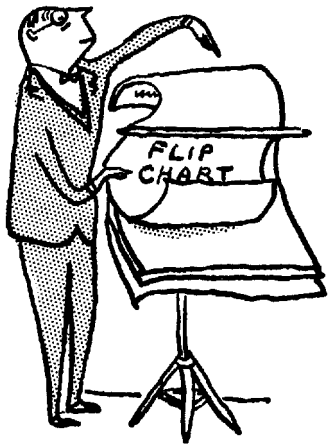
Poster making

Posters are the most widely used visual and are good attention-getters. They take more doing than the simpler displays but they can be done by an amateur.

An effective poster is simply a brief message you can read as you run and that you *will* read while you run. With careful planning, a message of not more than six words, a color scheme, some cut-outs or other illustrations, and prefabricated letters, anyone can make a good poster. The standard poster size is 22 inches by 28 inches. One and one-half-inch letters are legible at some distance; one-inch letters are suitable for posters that are viewed at closer quarters. Two-inch letters are more impressive if your message is brief enough or the poster is oversize.

Flip charts

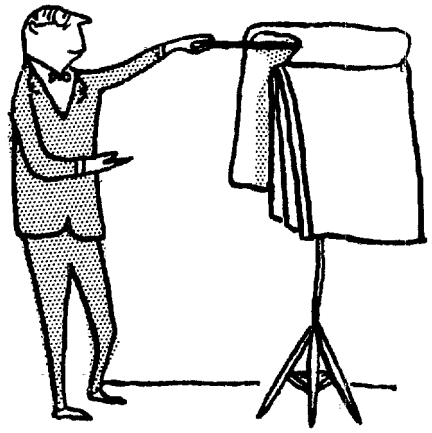
The principle behind flip charts is the building of a presentation step by step. At its simplest, **the flip chart is a series of messages on successive sheets of a large pad of paper.** The pad of paper is mounted on a wooden tripod so that the sheets can be flipped over the top. One after another, charts or items of an outline are flipped over to reveal and emphasize the next idea. Cartoons, diagrams, and illustrations add a great deal, if they can be developed and utilized in the presentation, but simple phrases will give real impact even to an outline.



The flip chart is peculiarly well adapted to the training situation. It is portable, legible, flexible, and practically guarantees an orderly presentation. It can be used in ways that a blackboard cannot, and obviously can provide a greater total writing area. The flip chart actually has most of the advantages of a blackboard and plus dividends because it rivets attention to successive parts of a presentation without losing by erasure such pearls of wisdom as might have future use.

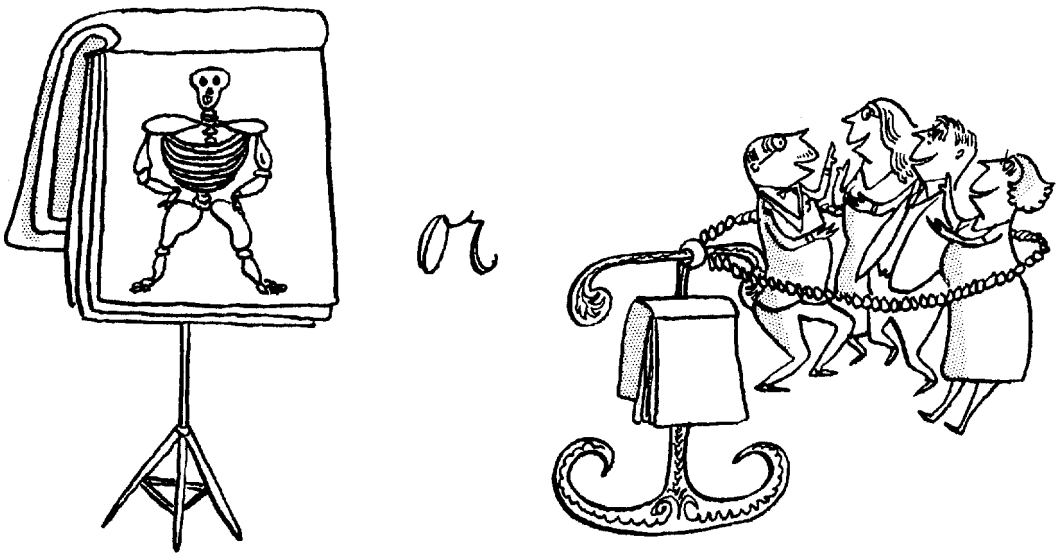
The preparation of a flip chart is really quite easy, but it does take careful planning to keep its mechanics unobtrusive and its service meaningful. Pads of newsprint ($1.00 per 100 sheets) or heavy paper, technically known as heavy detail, can be procured in sizes all the way up to 42 inches by 42 inches. The sheets of paper can be fastened across the top by strips of wood or metal tightly bolted together. It is possible, if a program is not to be repeated too often, to rely on the glue or stitching which holds a big pad of paper together. The wooden or metal bar holding the block of paper can be mounted at the top of an easel, or, slotted, can be set at the top of a spear-headed standard. Display houses can provide a packaged product if you are willing to pay for it.

THE FLIPPING-OVER PROCESS



The flipping-over process can best be engineered by using a pointer to lift the sheets of paper. Flip charts have many of the advantages of all so-called "strip tease charts." They sharpen attention by revealing the presentation piecemeal, and the process of turning big pages also rivets attention. Charts drawn on window shades which can be pulled down at the psychological moment can accomplish the same thing.

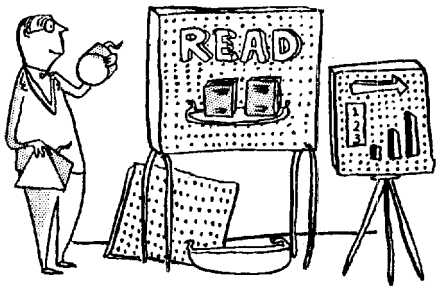
A flip chart prepared in advance **can provide a** comforting **skeleton on which to hang a lecture; it can also** be used extemporaneously to **anchor a discussion**



as it proceeds. This latter use requires more *savoir-faire* on the part of the instructor, but it makes the visualization follow rather than precede the discussion.

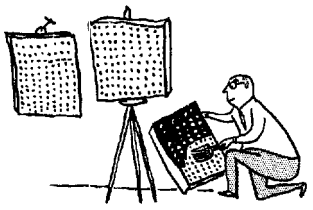
A fat grease pencil, an industrial fountain brush (like a fountain pen), crayon, or cotton pledgets rolled to cigar dimensions and dipped in ink (India ink or poster ink) make flip-chart preparation easy. India ink messages, allowed to dry, can be swabbed with color—a painless way of introducing color. A lettering brush or speedball pen in experienced hands will, of course, produce a more finished message, but this is not essential in most teaching situations.

Have you tried a peg board?



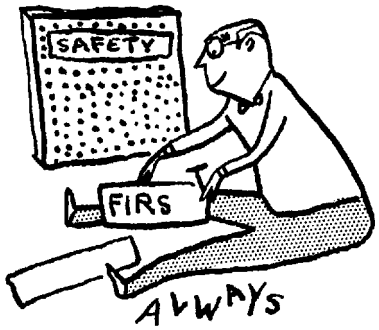
Two new versions of the display board are taking the visual-aids field by storm—the peg board and the felt (wool or flannel) board. **The peg board** is an ingenious device for displaying a wide variety of items of various sizes and shapes. Basically, it is a sheet of composition board with holes punched all over it, generally ¾ inch to 1 inch apart. Pegs, much like golf tees (wooden or plastic tees will, in fact, work), fitted into these holes will support papers, pamphlets, and odd-shaped objects.

Peg boards were developed by advertisers to display products and sales literature, and all sorts of ingenious hooks, handles, and shelves have been designed to go with them. **They can be painted** any color or used in their natural wood-brown state. They can be **hung on the wall, mounted on a stand, or used with easels.** They come in sizes ranging from 24 inches by 36 inches to 48 inches by 96 inches, double or single, mounted or unmounted, painted or unpainted, framed or unframed, with or without special lighting fixtures, and boxed or unboxed for shipping. Little metal mountings in which they can be stood are also available. Peg Board is a trade name but similar boards are available through display houses across the nation. Recently there has appeared on the market a packaged display kit (retailing around $45) which includes a mounted 2-foot by 4-foot peg board, a set of legs, shelves, and a variety of gadgets. This useful combination is widely used by book stores, libraries, and professional organizations.



It is possible to try out the peg board in a conservative way at little cost. A "raw" piece 4 feet by 6 feet by ⅛ inch in the natural color costs around $10.00.

It can be set on a pair of easels. Two shelves 5¾ inches by 11¾ inches (95¢ each), one shelf 5¾ inches by 35¾ inches ($1.85), and six special metal shelf supports ($1.25) plus price ticket holders ($1.75 per hundred) are all that are necessary for a very satisfactory display. Books, cards, posters, and pamphlets can be anchored by these price ticket holders, which may be inserted horizontally or vertically, as best fits the materials to be displayed. Picture hangers ($4.50 a hundred) also are useful for holding objects as diverse as canned reels of motion-picture film and cloth-bound books.



Titles for use with the peg board can be quickly improvised with 2″ or 3″ prefabricated letters mounted on 6″ strips of cardboard which in turn can be pegged to the board with some of the price ticket holders.

Felt board: black magic

The felt board—wool or flannel—can serve both as a display board and as the basis for a unique kind of presentation. It is simple in theory but startling in effect. All sorts of light-weight objects, pieces of paper, phrases, numbers, laid against a board covered with felt (which has been mounted slightly off the vertical) will adhere to it without visible means of support. Actually, each such object is backed with strips of sandpaper, emery paper, Flok-tite (a trademarked felted paper), or simply sand in dried glue. The audience invariably is fascinated by the spectacle of a speaker picking up an object, nonchalantly pressing it against the board, and having it stay there.

There are few more effective ways of building up a story. Poster-board cut-outs can be added piece by piece somewhat in the way that a jigsaw puzzle is built. The felt board has been used in kindergartens for a long time; only recently has it been rediscovered by the advertisers. Currently it is having quite a vogue and television has adopted it with telling effect.

Industrial trainers have taken over the felt board and its use has spread to governmental circles. The Bureau of Labor Statistics has developed a training course for supervisors of the interviewers for the cost-of-living index, using felt boards and "doll" kits of cardboard titles, numbers, and cut-out figures. This visual aid cut the training time on the concepts of the composition of the family and family budget from two days to one-half day. Dollar costs were cut in half even after allowing for the production cost of the felt-board presentation.

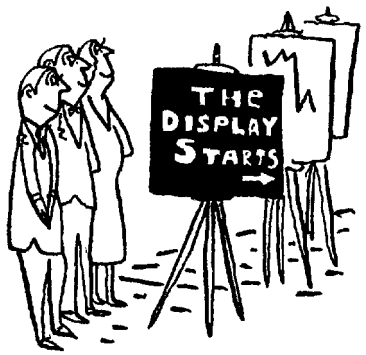
Such savings, of course, presuppose very large numbers of trainees and repeated training sessions, but the felt-board idea can make its contribution in any teaching situation where it pays to prepare sand-backed objects in advance. A very effective presentation can be worked out with prefabricated or speedball lettering, or even free-hand script, on strips of cardboard of any suitable color, with appropriate illustrative cut-outs.

When a training course is to go into several sessions, it usually **pays to engineer a change of pace** by using a number of different types of presentations. At this point the felt board is particularly useful; it will arouse even the most flagging interest.

Felt boards obviously require careful planning and real preparation but they also can be homemade. A display house or an artist can work up a presentation with sand-backed objects, but so can the determined amateur. Anyone can build an eminently satisfactory felt board by stapling felt to composition board and mounting the whole on an easel. Wool felt in colors as well as in black is available from manufacturers of industrial textiles or possibly from department stores. Seventy-two-inch felt retails at about $4.00 a yard. Cotton flannel, at a fraction of the cost of wool, is less satisfactory but will do in a pinch.

Again 4 feet by 6 feet is an eminently practicable size for a permanent felt board. Smaller felt boards are more usual for traveling displays and can be purchased packaged in a traveling case from a number of the leading display houses.

The felt board pays extra dividends as a fine display background when it is not in use as a part of a regular board presentation. All sorts of literature, cardboard, and pictures can be thumb-tacked to its surface with striking effect and without damage to the black felt nap. Titled with 3-inch white and colored felt letters, **the felt board serves as a valued display asset.**

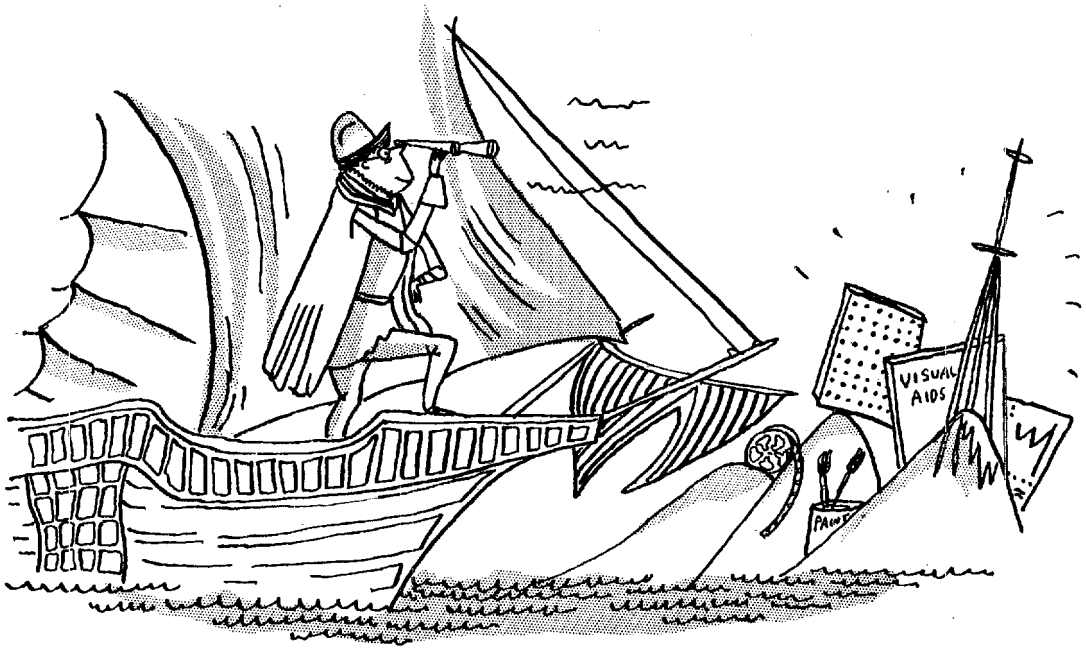


There is a film which spells out the use of the felt board in the school room:

> **The Felt Board in Teaching.** 16mm, sound, color, 10 minutes. Excellent presentation of the use of felt board in teaching children. Most of the suggestions are entirely adaptable to other audiences. It is produced by Wayne University, Detroit, Michigan, and rents for $3.00.

Whether the initial step in visual aids is to be a simple poster, a bulletin board, or one of the new and exciting peg-board or felt-board presentations, it is worth remembering that it is possible to experiment with any of these at a very modest dollar investment. The big cost is not the time it takes to plan and to exe-

cute the plan; it is the mind-stretching that goes with an exploration into new fields. But, as is usually the case, the first time is the hardest, and a voyage of discovery into the world of displays need not seem too venturesome if the course here charted is followed.



IV. Graphics

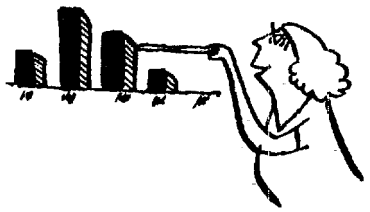
The next step up the visual-aid scale is the large and rewarding field of graphics. The simplest of graphics, particularly if tied in with imaginative layout, can transform a manuscript from a forbidding block of solid print into an attractive presentation that invites attention and makes itself understood.

The phrase **"dull as a government report" can lose its sting** —as indeed it is already doing—as government agencies learn to present the people's business in the arresting light it deserves. Good use of type styles and spacing will help, but the possibilities of meaningful graphics are almost limitless. What's more, no eager public servant need wait for a budget increase to capitalize on many of these possibilities. Anyone can make simple charts, graphics, and diagrams, and make them so that they can be satisfactorily reproduced.

Types of graphics

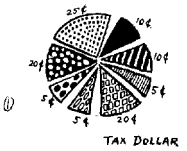
Graphics are lineal descendents of the well-known statistical graph. They can be schematic, illustrative, or pictorial.

Bar diagrams are most commonly used to compare quantities at different times or under different circumstances. Their components are measured blocks of color or symbols placed along a clearly marked scale.



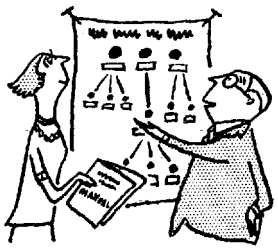
Bar diagrams are usually two dimensional, although it is considered very advanced to make them look like this:

Line charts are an outgrowth of bar diagrams. Points which represent measured quantities are joined together to make a continuous line. Such charts are particularly valuable for showing trends and growth.



Pie diagrams are used to show how parts make up the whole. Slices of the tax dollar pie are familiar.

Diagrams are good for spotlighting relationships. In this category are **organization charts** which are simply schematic presentations of relationships which exist, are supposed to exist, or ought to exist within an organization.



The **fact** of relationships can be indicated by connecting lines. **Types** of relationships can be indicated by different kinds of lines—broken lines, lines with arrows, lines in color—whose significance is described in a legend, code, or key.

Flow charts are diagrams which are used to show sequence in time, logic, process, or what have you. One or more visual elements are employed to carry the eye along from one point to another.

Flow charts can be created most simply by the use of connecting lines which, in the European-American tradition, read from left to right and from top to bottom. Flow can also be conveyed by build-up or diminution of size, by color, or by any device that indicates direction and continuity.

Pictorial graphics employ pictures, cartoons, illustrations, and symbols to convey statistical quantities and to give facts more punch. The simpler bar, line, or pie charts present literal comparisons of precise quantities, telling a factual story in a direct manner. There are, however, many stories that do not lend themselves to a strictly measurable approach. There are other occasions when the impact of data can be heightened by a more imaginative presentation. Here is where pictorial graphics make their unique contribution. Through the use of visual symbolism they can release a fountain of memory and association; in consequence on the consciousness of the viewer

THEY ETCH THEIR MESSAGE DEEPLY

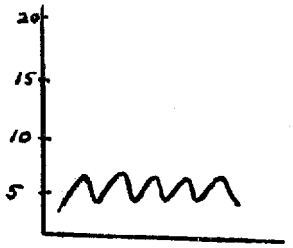
Well-illustrated graphics, therefore, tend to be more **noticeable**, more **memorable**, and more **action-stirring** than unadorned facts.

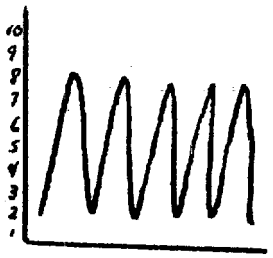
The knotty question of scale

When making any kind of chart, the key decision is the determination of how many units each inch or other unit of measure is to represent. Sometimes this is very easy; the total amount of available space can simply be divided by the largest number of units that are to be charted and the result sets the scale. But often the problem is not so simple. Suppose the problem is to chart the cost of some governmental service which puttered along unobtrusively for a generation or two, and then in the last five years grew enormously. If the scale covers 100 years, all the action in the chart will be concentrated in something less than ½ inch at the extreme right.

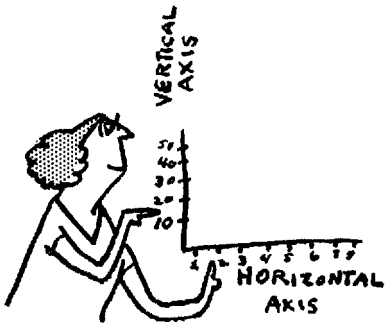
Such a chart provides a fine historical perspective. But suppose that you wish to highlight the period of accelerated activity. A chart based on a 100-year scale is not much help. It would be better to devote all the space to the period you are most interested in.

Suppose, on the other hand, that you want to draw attention to the range of fluctuations rather than to the time element in which these fluctuations occurred. Changing the scale—in this case the scale which is measured along the *vertical* axis—will produce impressive results. Compare the following two charts which record exactly the same data.





If you want the reader to go beyond first impressions, to meditate on the significance of the data you are presenting, let him in on the scale you have chosen, either by labeling it along the chart axes, both **vertically and horizontally,** or by including the scale in the legend, usually in one corner of the chart. There may be times, however, when you will want to convey the impression of growth or change as a kind of background for some point you wish to make. In such case, an unlabeled chart which simply climbs or descends significantly may serve the purpose better than a more forthright presentation of the data.



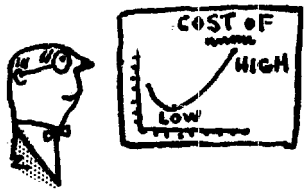
The key question is: What do you want to say, to whom and why? You may want your graphic to record facts in such fashion as to make it possible for your audience to check your conclusions for themselves, or you may wish merely to set the stage as a basis for further explanation. If the latter is your objective, don't set the stage with an initial presentation that is too literal. The first approach is logical and argumentative; the latter is impressionistic. Each serves a different purpose, but each may be equally valid in proper circumstances. In all events, it is important that you

DO NOT THOUGHTLESSLY SCRAMBLE THE TWO TYPES OF GRAPHICS: YOU WILL CONFUSE AND ALIENATE YOUR VIEWERS

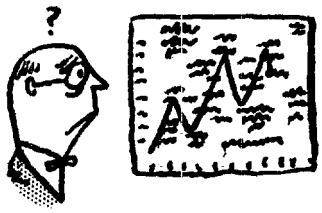
The good name of visual aids has suffered much from this sort of mishandling.

Titling Charts

Good graphic titling, like the titling of every other visual, is of prime importance. It may be desirable to go beyond simply naming the graph; subsidiary spot labels may be required to make the message easy to grasp. On line charts, for example, **high points and low points may** sometimes **profitably carry labels** even though the scale is perfectly apparent. Key quantities or striking percentages may also gain emphasis by being marked.



Sublabeling, however, can easily be overdone. If too many special cases are highlighted, or the labeling is too emphatic, **the presentation may seem restless, confused, and disorganized.**

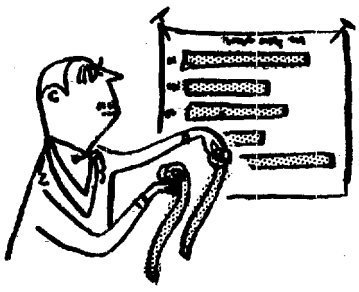


Graphics on standard 8½ inch by 11 inch or legal-size paper need titles at least ½ inch tall. Subtitling can be smaller, legends smaller still.

Prefabricated graphic materials

Bar and line diagrams in black and white and even in color can be made quite easily by

MOUNTING MEASURED STRIPS OF BLACK OR COLORED PAPER ON CAREFULLY DRAWN AXES



Special graphic tapes that are pressure sensitive have appeared on the market. These tapes come in black, white, green, orange, blue, and red, and in widths from ⅛ inch to ½ inch. The rolls come in lengths up to 640 inches, and prices range from 90¢ to $2.50 per roll. Fine-line tapes make admirable axes; they can also be curved to make line charts. Rolls of tape imprinted with arrows, diagonals, and cross-hatching are also available, making it possible to prepare unusual graphs with very little effort. Rolls of graphic symbols—men, women, children, dollars, cents, bales, houses, trucks, busses, cars, airplanes, ships, freight cars—further extend the usefulness of these new charting materials.

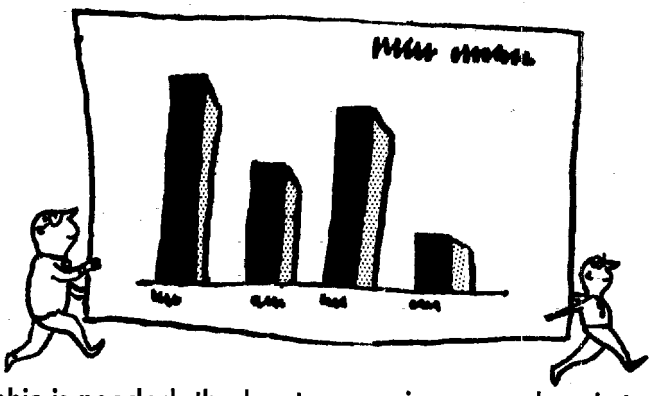
Pressure-sensitive rectangles specially designed for organization charts are available in a wide range of sizes. These may be obtained either in sets or in a single size.

Plastic charting boards (20¾ inches by 23½ inches at $13.75 and 10⅜ inches by 17½ inches at $4.50), which further simplify the charting process, also have been developed. These boards carry shadowy guide lines which eliminate some of the more tedious problems of layout. The lines are pale blue and disappear completely in photographs. The boards can be used over and over.

Zip-a-Tone is another product which is very useful in producing interesting graphics. Zip-a-Tone comes in sheets of paper-thin acetate carrying the imprint of scores of different patterns of lines and cross-hatchings. Large sheets cost under $1.00 and can be cut to any size or shape. The cut-outs adhere to paper without glue. Zip-a-Tone reproduces easily, as witness the shading of the cartoons in this manual.

All sorts of prefabricated cut-out symbols—stars, dots, triangles, squares, etc.—with or without adhesive backs are also available. Such symbols singly or in groups are decorative and will attract favorable attention. In measured units, they can be used to convey quantities.

Try king-size graphics



When a large chart or graphic is needed, the least expensive procedure is to start with a small one and blow it up either photographically or by projection. Both methods have advantages and disadvantages and their own special costs. If you want a blown-up graphic that can be hung or mounted, most photographic houses are glad to oblige for a surprisingly small sum. (One 8-inch by 10-inch black and white chart was blown up to 40 inches by 48 inches for around $12.)

There is almost no limit to the size to which graphics can be enlarged *if* the original is sharply black (India ink) and white, or if a good film negative is available. Photo murals are generally reproduced from photographic film. Photographic enlargements can, of course, be done in color, but at much greater expense.

Cartoons and other line drawings can be blown up inexpensively with the use of the pantograph—a series of arms and levers which will reproduce enlarged versions of whatever is traced with the guide points.

For simple copying, the sterling merits of a big pad of tracing paper should not be overlooked.

If you have access to an opaque projector (see page 79), it can be used to blow up charts, line drawings, or even more elaborate presentations. Simply focus the projector on a piece of paper of appropriate size hung on a wall, screen, or bulletin board and trace the image either with pencil or crayon, or, if you are courageous, directly in ink or color.

Methods of reproduction

The questions of whether or not visuals are to be reproduced and by what method should be faced at the very beginning. Color reproduction in general is very expensive. Most ordinary visuals, therefore, are produced in black and white.

The contemplated method of reproduction exercises an important control over the design of a chart or other visual. Some things can be done in an original drawing that are impracticable if it is to be reproduced by one or another of the usual reproduction processes: mimeograph, multilith, planograph, silk screen, or letterpress. It is a good idea, therefore, to

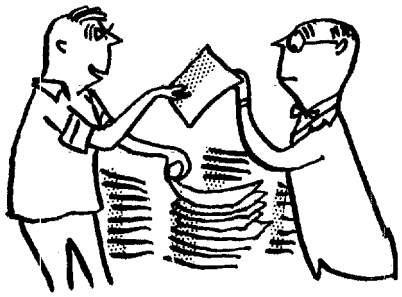
HAVE A NODDING ACQUAINTANCE WITH REPRODUCTION PROCESSES IN TERMS OF ALTERNATIVE COSTS AND USEFULNESS

Mimeograph, multilith, and planograph processes all start with typewritten copy. Mimeographing is the least expensive. A stencil is cut on the typewriter; the stencil, in turn, is run off on the mimeograph. Most mimeograph jobs are limited in flexibility and attractiveness. There are, however, a few tricks which will give life to this cheapest of reproduction methods. An electric typewriter, where available, cuts stencils more evenly; thus the finished page looks evenly black. Titling can be made to stand out with the use of a Varityper (see page 52). Line drawings or hand lettering can be done directly on the stencil. Simple charts can be improvised on the typewriter, as on the next page.

COUNCIL-MANAGER ADOPTIONS

1903	One	
1920	XXX	157
1930	XXXXXXXX	388
1940	XXXXXXXXXX	521
1950	XXXXXXXXXXXXXXXXXXXX	977
1951	XXXXXXXXXXXXXXXXXXXXX	1,037
1952	XXXXXXXXXXXXXXXXXXXXXX	1,099

Careful spacing and arrangement make a difference both from the point of view of attractiveness and readability, and the use of colored or textured paper can perk up the simplest job. Mimeograph and multilith papers come in a wide variety of textures and colors, but **professional advice is needed in selecting papers for the different processes.**



Multilith, a type of offset lithography, provides greater flexibility in illustrations, titling, and so forth. It is about twice as expensive as mimeograph for relatively small quantities. Although direct printing from a typed paper or aluminum stencil is possible, it is more common for the typed copy to be photographed onto a plate and reproduced from this plate. A photographic plate can be made for about $2.50. Photographs, or any black and white illustrations, can be reproduced at no extra cost. Colors can be reproduced if a separate plate is prepared for each color and if you are willing to pay for the additional press runs, plus the cleaning of equipment that each color requires.

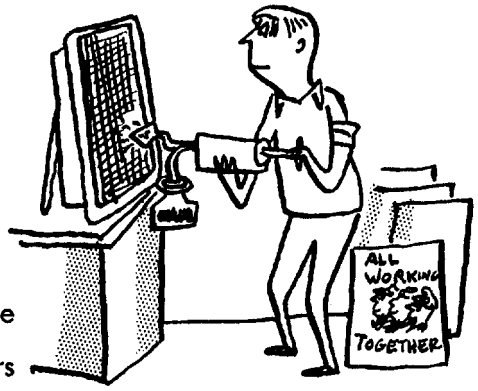
Planographing is very similar to multilith. It also involves a photographic plate. However, planograph presses are built to reproduce several pages at once and are, therefore, more economical for reproducing multiple-page newsletters and similar items.

Letterpress is probably the most flexible of the printing processes but it can also be the most expensive if the quantities run are small. Handsome effects can be achieved with imaginative typography. Most printers will suggest alternative arrangements without additional charge, and a good designer can work wonders with standard type styles.

Letterpress may prove to be the most practical if large quantities are desired. The heavy expense involved in limited runs results from the fact that type must be set line by line (linotype) or letter by letter (monotype). The individual lines that form a page are locked into forms, and then put on the presses. Illustrations are expensive because they must be translated into engravings on electrotype plates which are then locked in with the type.

The silk-screen process is a relatively inexpensive method of reproducing rich opaque colors by

SQUEEZING PAINT THROUGH A SCREEN



that has been processed to let the color come through in patterns. It is widely used for posters and covers, particularly when quantities are too small to be worth a print job.

In selecting a printing process on a strict cost basis, the number of copies desired is frequently a controlling factor. It always pays to get competitive bids and to keep an open mind toward the different printing processes. Generally speaking, mimeograph is used for small runs (2,000 copies or less), multilith for slightly larger runs (up to 10,000 copies), and letterpress for still larger quantities.

Lettering for reproduction

The Varityper can give variety to mimeograph and multilith copy. The Varityper is a patented office composing machine that looks much like an overgrown typewriter. It can use more than 50 type styles in sizes that range up to ½ inch, and can also handle a variety of unusual symbols. The Varityper is expensive, but many commercial mimeographers and multilithers are equipped with such machines.

The following are samples of Varitype styles.

Visual aids are here to stay. The public service may profitably use them.

Visual aids are here to stay. The public service may profitably use them.

Visual aids are here to stay. The public service may profitably use them.

Visual aids are here to stay. The public service may profitably use them.

Visual aids are here to stay. The public service may profitably use them.

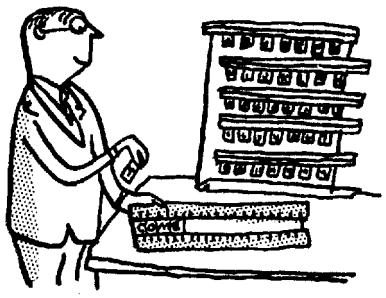
VISUAL AIDS ARE HERE TO STAY. THE PUBLIC SERVICE MAY PROFITABLY USE THEM.

Visual aids are here to stay. The public service may profitably use them.

Visual aids are here to stay. The public service may profitably use them.

The manufacturer of the Varityper has recently announced a new title-composing machine—the Headliner—which will print still larger letters (up to nearly one inch tall) from a series of master dies. The finished title comes out of the machine on a ribbon of paper ready for mounting on the visual.

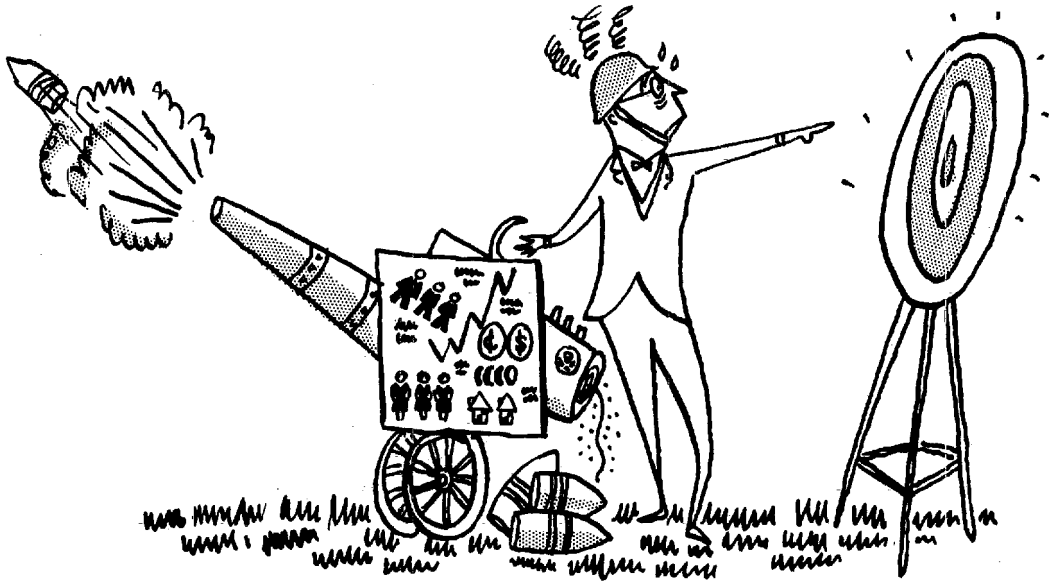
Titles for graphics that are to be photographed can be prepared quickly and economically in Fototype, which has been designed especially for photographic reproduction. It comes in more than six dozen different sizes and styles and in upper and lower case letters. Numbers and some 200 symbols are also available. Fototype letters come in pads of individual letters (25 to 50 per pad, depending upon the set purchased; complete sets cost from $7 to $11). Letters are torn off singly as needed and the title is assembled on a composing stick which makes possible perfect alignment and foolproof spacing. When complete, a piece of Scotch tape is applied to the back of the letters, and the strip is removed from the composing stick. The whole is then mounted in position on the chart or manuscript with rubber cement.



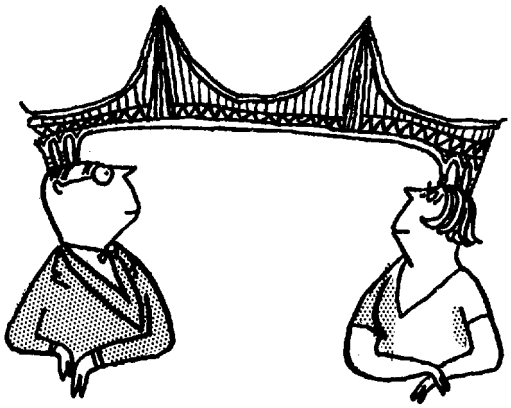
The edges of the small squares of heavy paper on which Fototype letters are imprinted do not show up in photography but they are quite apparent on the original. There are plenty of occasions when this limitation offers no serious drawback, in which case Fototype can be used in original graphics.

When you buy pictorial graphics

Graphic statistics, where the whole presentation is worked out in groups of symbols, are currently in vogue. Well done, these are enormously effective, more interesting, and frequently more informative than tables or even simple line charts. However, **if the zeal for pictorial effects is not accompanied by care** that the pictures elucidate the purposes of the graph, the viewer is distracted and **the pictorial graphic may miss the target.**



Graphic statistics are becoming a flourishing facet of the design business. Generally they are quite costly—and not just because art work can be expensive. Even the simplest chart takes research and careful planning. Hiring an artist is only the beginning. He needs to know what you want said and how you want it said before he can figure out whether your message is suitable for visuals. This takes time and there can be many a slip between plan and finished product and plenty of room for misunderstanding on both sides.



Much of the expense of **bridging the gap between minds** and the hazard of disillusion which hovers over a first flyer in graphics stems from the fact that the client does not know enough about graphics to know their limitations. Nor does the artist know enough about his client's business to do more than a superficial job. The result is muddling-through costs.

Standard charges, $75 to $250 per graphic, make room for consultation and inevitable revision. These costs can be cut almost in half if you know what you want *in detail* before you commission an artist. It is advisable to prepare a statement for each graphic, spelling out:

Purpose of the graphic, plus a limited number of subpurposes

Key data or facts to be presented

Suggested statistical, schematic, or other presentation.

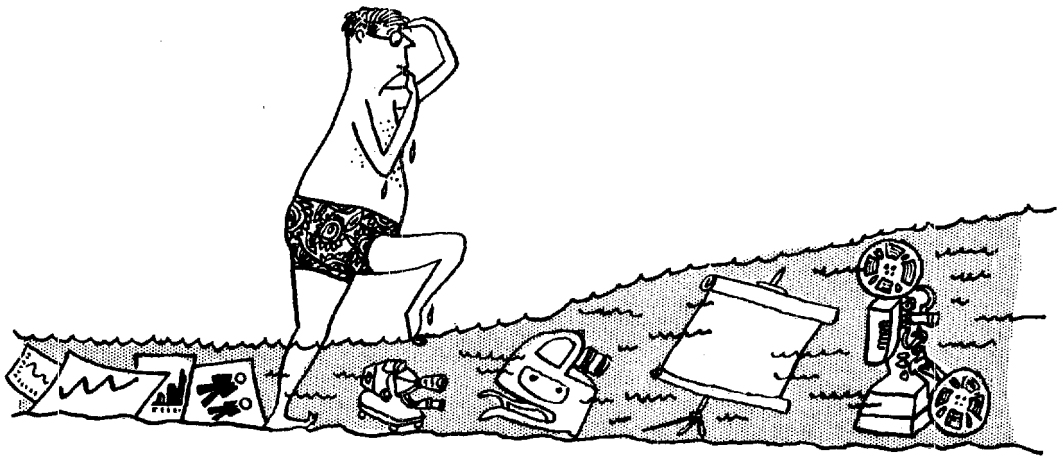
Such planning will give form to much amorphous material and will cut costs, frustration-wise and dollar-wise.

Large advertising firms have graphic sections or artists who are experienced in graphic presentation. In most metropolitan areas there are firms which specialize in graphic presentations.

The field of pictorial statistics is so new that many of the professionals, like the amateurs, are still floundering around in its unmapped reaches. The buyer as well as the designer of graphics would do well to become familiar with a pioneering book in this field:

Pictographs and Graphs. by R. Modley and D. Lowenstein. Harper and Brothers, 1952. $4.00.

When simple graphics are once mastered, the visual aids horizons beckon invitingly. The hurdles of homemade graphics, displays, and posters taken, the visual-aids enthusiast—he will be an enthusiast by this time—is equipped to make sensible decisions as to **whether to penetrate the visual aids field in depth.**



V. The Rich Field of Films

At this point the visual-aids amateur is perhaps toying with the idea of filmstrip or even motion-picture production. Neither of these is for him—yet—because the costs are substantial and because the film medium already has potentialities which have probably eluded him. However, he can find in the field of existing films undreamed-of resources for both in-service training and public information programs.

What films can and cannot do

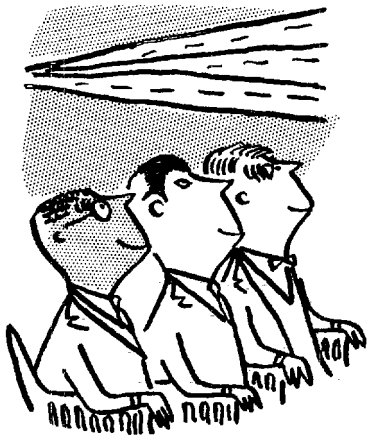
Motion pictures can do some things that no other visual can do. They have a quality of aliveness that no other medium can match; potentially they are able to convey attitudes as well as facts. The qualities of motion, emotion, and growth tied to a dramatic story can be used so that the onlooker will identify himself with the characters portrayed. This identification is a powerful tool for tapping human emotions and for sparking action.

Motion Pictures

are usually welcome and are always attention-getting.

Motion Pictures

* **Create** a favorable learning climate
* **Hold** attention until a complete story has been told
* **Reach** people in groups
* Can be **used again and again** with successive groups
* Can be repeated whenever such **repetition is effective**
* Can be designed to **do a special job** with great effectiveness
* Can give **new meanings to the commonplace**
* Can **telescope** time and distance
* They, like other visuals, can **cut across** many of the **differences** that divide men and make other forms of communication difficult.



Despite all these advantages, there are occasions when motion pictures will not work as well as some other, cheaper device. A film is a packaged product whose flexibility is sharply limited. It can often spark interest, but it may be hard to tie into subsequent discussion without losing the spontaneity of the group.

No film is self-teaching, although many teachers like to think that it is. It cannot explore the full reach of a teaching situation, and much of its effectiveness can be lost unless it is followed up by explanation, discussion, and application.

Thus, **while a film can introduce, reinforce, and supplement what an instructor has to say, it cannot replace him.**

Films, moreover, tend to be associated with recreation, a circumstance which sometimes presents a real teaching hazard.

Despite these reservations, a suitable film is still a Number One teaching resource. Anyone who desires to make the most of visual aids will do well to search for a motion picture that can serve his purpose.

The public servant who can find his way through the maze of

Film Producers

Film Rental Libraries

Film Listings, and

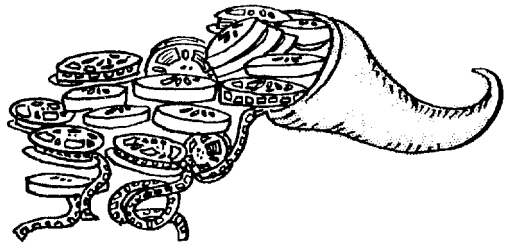
Evaluation Services

will command scores of over hundreds of films, each of which has cost someone else tens of thousands of dollars. It is the purpose of this and the following chapter to blaze a trail through this luxuriant wilderness.

Films in government

The government official in search of usable films will first want to know whether other government jurisdictions have produced films that will be useful to him. He will discover

AN ABUNDANCE OF GOVERNMENT FILM RESOURCES

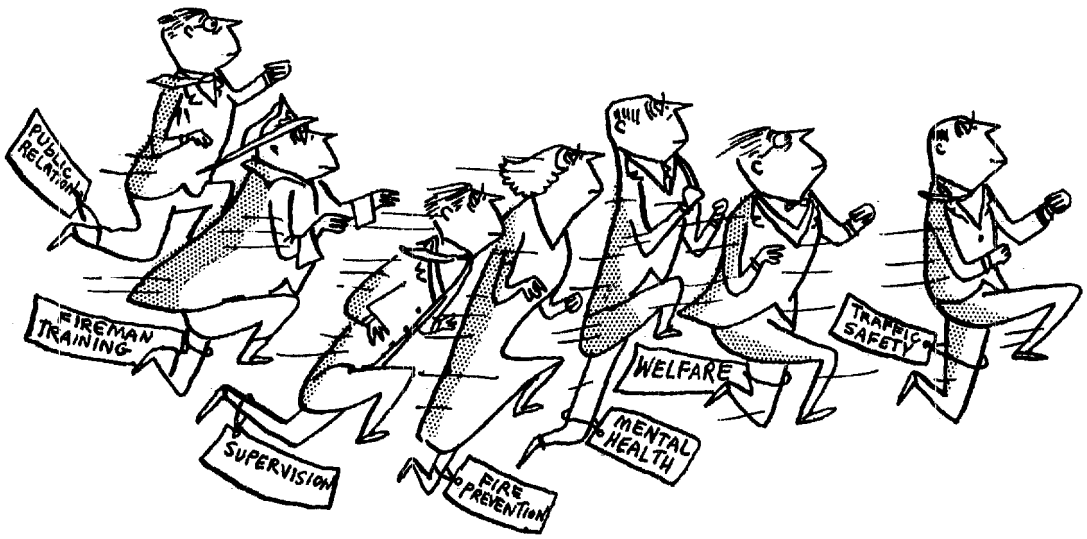


The volume of government-produced or sponsored films is very large and steadily growing. The federal government has produced more than 7,000 films; almost every department is involved in film production. The Department of Defense has been the chief producer of training films. The State Department and the foreign assistance agencies also are continuously producing films that interpret American foreign policy both at home and abroad. The Department of Agriculture and the Department of the Interior, notably the Bureau of Mines and the Bureau of Public Roads, are first-string producers. The Communicable Disease Center of the Public Health Service produces more than forty motion pictures per year and another forty film strips. Other arms of the Department of Health, Education, and Welfare (formerly the Federal Security Agency) are likewise in the film business: the Office of Education, the Children's Bureau, and the Food and Drug Administration. The Federal Bureau of Investigation uses a substantial number of police training films.

State governments generally and not a few local governments have also turned out films in volume. Nearly one-half of the state departments of health have produced their own films; state departments of welfare and of highways are also knee-

deep in the film-producing or sponsoring business. Every state in the union operates, usually through its university extension program, at least one film rental library. Altogether there are 271 of these state-operated libraries and they stock a total of 130,000 reels of film.

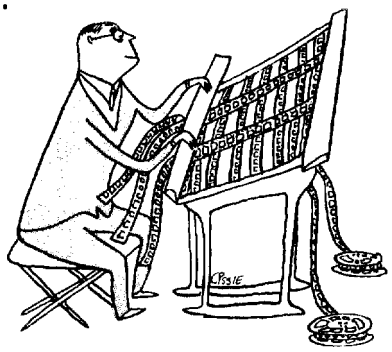
City governments likewise have discovered films; some cities have gone all out for them. A sampling of thirty-two localities uncovered 512 films in use, and nearly a quarter of these had actually been produced by the cities themselves. **Traffic safety films led the field.**



Many of these films at all levels of government are deserving of still wider use. Although produced for a particular jurisdiction, they can often be used with almost equal effect elsewhere. Even when they cannot be transplanted bodily, they provide useful object lessons to other jurisdictions.

It pays to borrow from business

In addition to the resources in the government film field, there is the untapped potential of the industrial and educational film field.



Films are woven into the fabric of American life and thousands of new titles are produced annually. The number of films that were produced for other purposes which even now are directly useful to governments is unexpectedly large. One list of training films, for example, includes nearly 3,000 titles, while the standard reference in the educational field lists more than 8,000. Unmined riches in training films in such fields as office management, supervision, personnel practices, public relations, and human relations offer a rewarding field for exploration. There are also literally thousands of films that are potentially useful in information programs.

Technical improvements are on the way which promise to make pre-existing films more useful. Sixteen millimeter sound projectors are appearing on the market which can take film with magnetic tape (after the manner of the tape recorder) instead of or in addition to the usual optical sound track. By making it possible to re-do sound to fit purposes other than those originally intended, these projectors will greatly increase the usefulness of tens of thousands of motion pictures.

The significance to the public service training field of this technical achievement can hardly be overestimated.

FILMS ORIGINALLY PRODUCED FOR INDUSTRY

CAN NOW BE RE-EDITED WITH EASE

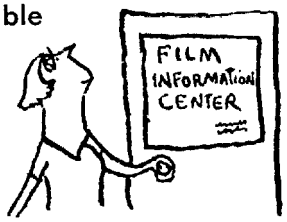
AND TRANSPLANTED WITH CUSTOM-TAILORED COMMENTARY TO THE PUBLIC SERVICE FIELD

Many would-be users of motion pictures are deterred by a mental picture of mountainous hazards that bar the way to finding films, a screen, a projector, and a projectionist. The barriers are less forbidding than they first appear. Here's how to surmount them with ease.

Finding a suitable film

As a start, seek assistance at the nearest available

FILM
INFORMATION
CENTER

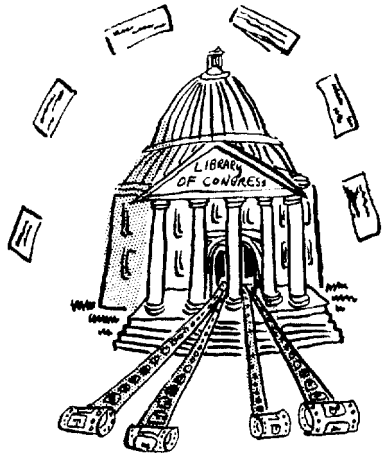


There are more than 1,000 of these from coast to coast, variously named as film councils and visual-aids services of public libraries and state universities.

Turn also to your local commercial film rental libraries. A copy of *A Directory of 2002 16mm Film Libraries* (Federal Security Agency, Bulletin 1951, Number 11) is available from the Government Printing Office, Washington 25, D.C., for 30¢.

The standard film reference book which is to be found in most public libraries is the *Educational Film Guide* published annually with quarterly supplements by the H. W. Wilson Company, 950 University Avenue, New York 52, New York ($5.00).

The Library of Congress is presently engaged in the process of issuing catalog cards on available films. These will cover films produced since January 1, 1952, that are either U. S. Government films, copyrighted films, or films which private producers want included. Four thousand cards are to be released this year. Check with your library.



If your budget is too tight to allow for many film rentals (few educational films rent for more than $5.00 a showing), you may have to rely on free films. In this case try the *Educator's Guide to Free Films,* published by the Educator's Progress Service, Randolph, Wisconsin. This guide is frequently available in public libraries or can be bought for $6.00.

If you want to know what U.S. government films are available, there is the *3434 U.S. Government Films,* compiled by the U.S. Office of Education (Federal Security Agency, Bulletin 1951, Number 21), available from the Government Printing Office, Washington, 25, D.C., for 70¢. The films are listed alphabetically by title only.

Most listings are less than wholly satisfactory since they do not give rental sources or evaluations that are useful to government officials. Chances are that **sleuthing in bibliographies of professional groups and trade associations will produce leads** to films that will be extremely useful to public officials.

Three organizations of public officials have produced their own film listings:

A Selected List of Films for Public Employee Training. Civil Service Assembly, 1313 East 60th Street, Chicago 37, Illinois, 1953 ($2.00).

Motion Picture Films on Planning and Housing: A Bibliography. American Society of Planning Officials, 1313 East 60th Street, Chicago 37, Illinois, 1951 (50¢).

Films in Public Works. American Public Works Association, 1313 East 60th Street, Chicago 37, Illinois, 1952. (Apply to local chapter to inspect serial listing covering 200 films in 20 public works categories, including public housekeeping, water supply and purification, vehicle care and maintenance, and materials and material handling.)

Some other useful specialized film listings are:

Civil Defense

U.S. Civil Defense Official Film Listing. Federal Civil Defense Administration, Washington 25, D.C.

Sixteen Millimetre Films of Britain at War. British Information Service, 30 Rockefeller Plaza, New York 20, New York.

Democracy and the American Heritage

One Hundred Two Films on Democracy. Office of Education, Department of Health, Education and Welfare, Washington 25, D.C., 20¢.

The American Heritage in Films. American Library Association, 50 East Huron Street, Chicago 11, Illinois.

Bibliography of Films for the Orientation of Immigrants, American Library Association, 50 East Huron Street, Chicago 11, Illinois.

Citizenship Movies. National Education Association, 1201 16th St. N.W., Washington, D.C.

Fire Prevention and Fireman Training

Fire Control List. National Fire Protection Association, 60 Batterymarch Street, Boston, Massachusetts.

Fire Prevention Films. National Board of Fire Underwriters Film Library, Bureau of Communications Research, Inc., 13 East 37th Street, New York 17, New York.

Health, Mental Health and Welfare

Motion Pictures on Child Life. Children's Bureau, Department of Health, Education, and Welfare, Washington 25, D.C.

Mental Health Motion Pictures. Public Health Service Publication No. 218, Superintendent of Documents, Government Printing Office, Washington 25, D.C.

Psychological Cinema Register. Pennsylvania State College, State College, Pennsylvania.

Audio-Visual Resources for Health and Welfare. See and Hear Magazine, 7064 N. Sheridan Road, Chicago, Illinois.

Child Development. New York University Film Library, Press Annex Building, 26 Washington Place, New York 3, New York.

Films on Emotional Health, Child Development, Education and Health. Columbia University, Communications Materials Center, 413 West 117th St., New York 27, New York.

Films on Mental Health. International Film Bureau, 6 N. Michigan Avenue, Chicago 2, Illinois.

Health and Welfare Films and Film Strips. National Film Board of Canada, 400 W. Madison Street, Chicago 6, Illinois.

Selected Films for Hospital Administration. State University of Iowa, Iowa City, Iowa.

Films Made by Community Chests and Councils of Social Agencies. Community Chests and Councils, Inc., 155 East 44th Street, New York, New York.

Housing and Planning

Films on Housing. Public Housing Administration, Housing and Home Finance Agency, Washington 25, D.C., November, 1950.

Human Relations

Human Relations on the Screen. EFLA Service Supplement, Educational Film Library Association, 1600 Broadway, New York 16, New York.

Films and Filmstrips Available from Anti-Defamation League, B'Nai Brith, 327 S. LaSalle Street, Chicago 4, Illinois, free.

Films on Intergroup and Community Relations. University of Illinois. Champaign, Illinois.

Juvenile Delinquency

Film Catalogue. N.Y. State Youth Commission, 40 Howard Street, Albany 7, New York.

Suggested Film Bibliography for Police-Juvenile Officers. Delinquency Control Institute, University of Southern California, Los Angeles, Attention: Dr. John Gerletti, mimeo.

Police Training

Films for Police Training. Pennsylvania State College, State College, Pennsylvania, mimeo.

Police Training Films. Federal Bureau of Investigation (available to law-enforcement officers only). Write local office of FBI or Mr. J. Edgar Hoover, FBI, U. S. Department of Justice, Washington, D. C.

Training Films. California State Department of Education, Peace Officers' Training Division, Sacramento 14, California, mimeo.

Safety

National Directory of Safety Films. National Safety Council, 20 N. Wacker Drive, Chicago 6, Illinois, 25¢.

One-Minute Traffic Safety Films. National Safety Council, 20 N. Wacker Drive, Chicago 6, Illinois.

Supervision, Training and Management

Film Guide on Industrial Relations. Film Research Associates, 135 W. 52nd Street, New York 19, New York, $3.00.

Film Guide for Improving Office Practices. Film Research Associates, $1.50.

Film Guide on Production and Management Methods. Film Research Associates, $1.50.

Index of Training Films. Business Screen Magazine, 7064 N. Sheridan Road, Chicago, Illinois, $2.00.

Motion and Time Study Films. State University of Iowa Industrial Engineering Film Library, Iowa City, Iowa.

Supervision: Key to Manpower Utilization. United World Films, 1445 Park Avenue, New York 29, New York.

A Guide to Audio-Visual Materials in Manpower and Industrial and Labor Relations. New York State School of Industrial and Labor Relations, Cornell University, Ithaca, New York, 25¢.

Films and Filmstrips for Labor Groups. Institute of Management and Labor Relations, Rutgers University, New Brunswick, New Jersey.

United Nations Listings

United Nations Films. Department of Public Information, United Nations, 610 Fifth Avenue New York 20, New York.

Child Welfare Films. UNESCO and WHO, Films and Visual Information Division, Department of Mass Communications, UNESCO, 19 Avenue Kleber, Paris 16, France, $1.00.

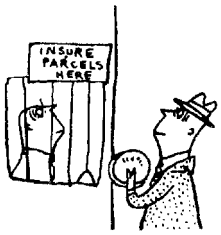
Visual Aids

Suggested Visual Aids for Use in the Teaching of Audio-Visual Aids. Pennsylvania State College, State College, Pennsylania, mimeo.

Miscellaneous

A Library of Educational and Instructional Sports Films. A. G. Spalding and Brothers, 161 Sixth Avenue, New York 13, New York, free.

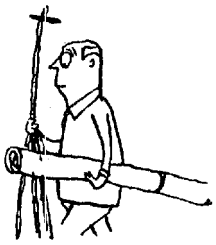
Book films in advance



months in advance, when possible—and get confirmation of booking dates. Return films promptly. **Don't forget to insure them;** film prints are costly.

Locating the screen and the projector

Most photographic supply houses and equipment dealers will rent screens.* They can be rented for $1.50 and up per day. Most hotels, schools, and churches have screens. So-called daylight screens preclude the necessity of a complete blackout. If no screen is available, use a wall, preferably white. Successful outdoor showings can be engineered by projecting against a white-washed wall.



Roll-up screens are most satisfactory for permanent installations, but **easel screens** are more flexible than the roll-up type.

A 70-inch by 70-inch screen is most useful in classrooms since it will take both motion pictures and slide films. The distance from the projector to the screen controls the size of the picture.

Always check film size. Educational motion pictures are 16 millimeter sound films; films for commercial theaters are 35 millimeter.

Do not try to run sound film on a silent projector. If you do, the film will be punched full of holes. Silent films, however, can be run on a sound projector.

You can probably borrow a projector. Many churches and service clubs now have them. Most photographic supply houses and audio-visual dealers will rent as well as sell projectors and teach you to operate them. Sound projectors can be rented for around $15 a day. *Business Screen,* 7064 Sheridan Road, Chicago, Illinois, has published a handbook of audio-visual equipment, price $3.50.

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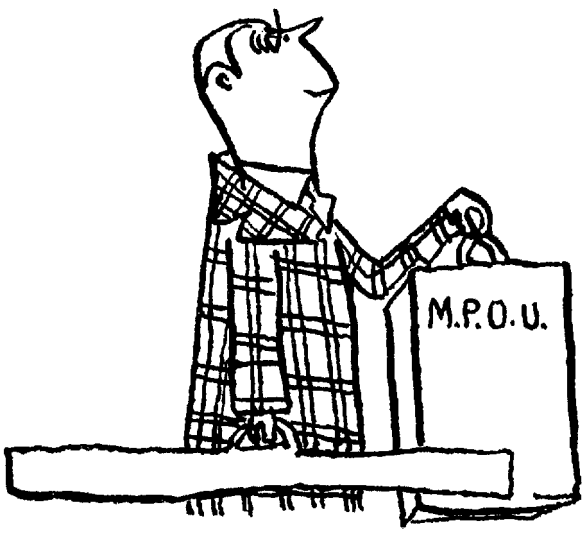
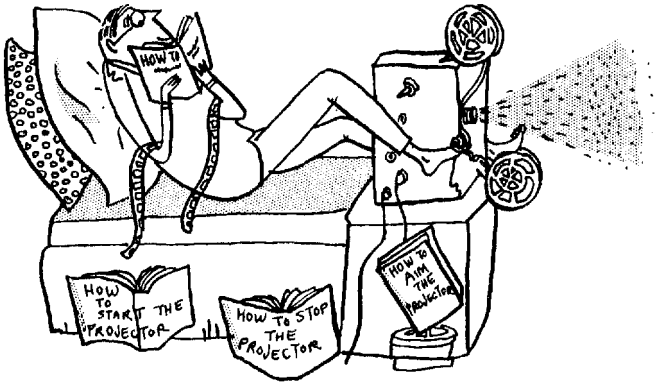
* The National Audio-Visual Association, 2540 Eastwood Avenue, Evanston, Illinois, will provide a nationwide list of its members. It also publishes *Current Models of Audio-Visual Equipment,* 1953, $3.00.

Where to get a projectionist



In many cities, the Motion Picture Operators Union will provide a union operator complete with equipment for around $25 a showing. Schools and local film clubs can usually provide amateur projectionists. (Watch union regulations.)

Teach yourself to run the projector—you can learn in an hour with the aid of a good projectionist manual.



Two such manuals are:

The ABC's of Visual Aids and Projectionist's Manual, by Philip Mannino. Available through M.O. Publishers, Box 406, State College, Pennsylvania, $1.00.

The Projectionist's Handbook. *Business Screen,* 7064 Sheridan Road, Chicago 26, Illinois, $1.00.

To produce or not to produce

Motion-picture production is expensive, so expensive that all but the biggest budgets shy away from it. Professional estimates run quickly up to $1,000 per minute of running time for color sound movies.

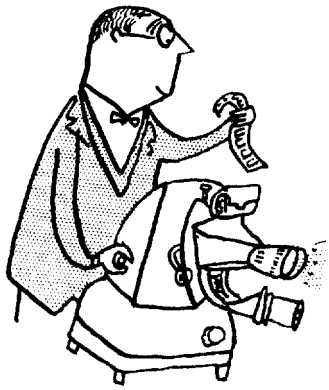
Amateur motion pictures *are* feasible, but by and large they suffer in comparison with professional productions. There are, however, occasions when "homemade" government motion pictures can serve a modest purpose very well. A growing number of cities, including Eugene, Oregon, and San Mateo, California, have used homemade films with telling effect to report government operations to the local citizenry. They found that imagination, careful planning, and the hard work of devoted volunteers can produce a useful movie for about $1,000.

Such homemade productions will become easier in the future. Motion-picture know-how is spreading rapidly. A growing number of universities and other nonprofit organizations are producing motion pictures at cost. The universities also are teaching motion-picture production. The University of Southern California and Indiana University are experimenting with short-term intensive courses which should swell the ranks of amateur producers. Obviously, the processes of motion-picture production are too technical and the necessary equipment too costly to deserve any detailed consideration in this "how to" manual.

If you are contemplating a professional film—your numbers are growing steadily—it will be worth while becoming acquainted with "A Buyer's Guide to Qualified Film Producers," in *Business Screen*, volume 14, #1, 1953.

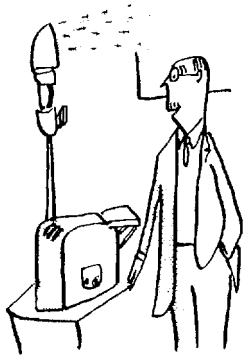
Even the production of motion pictures is not the end of the visual-aids trail.

FILM STRIPS
(35mm slides rephotographed onto a strip of film)



OPAQUE PROJECTORS, and

OVERHEAD PROJECTORS



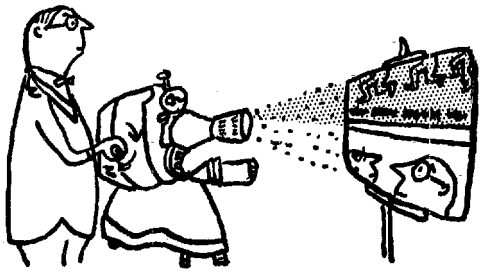
have possibilities which no one interested in visual aids should overlook—but that is another chapter.

VI. Variations on the Film Theme: Film Strips, Still Projectors, and Showmanship

Despite the rich resources of the motion-picture field, quite frequently no usable motion picture can be uncovered. At this point, and even before, it will pay to investigate film strips and the potentialities of still projectors. Homemade slides have been part of trainers' kits for a long while, but slide films as a resource are currently outdistancing them.

In any event, whatever equipment you choose

LEARN TO USE IT PROPERLY



Film strips in the ascendancy

Slide films or film strips are, quite simply, photographic slides that have been reproduced in series on a strip of 35mm film. With an accompanying script, they can have many of the "packaged-product" advantages of the motion pictures. When they are accompanied by recorded commentary, they become sound-slide films.

Film strips have much to recommend them. They have demonstrated remarkable adaptability, particularly for audience participation situations, since the speed of showing can be adjusted to the pace of the discussion. Copies can be purchased very cheaply, usually for less than $2.50. Also, the neat little rolls of film in their bright 2-inch by 2-inch metal cylinders pose no storage problem.

Many instructors and trainers are finding that film strips supplement motion pictures with great effectiveness. It is not uncommon for producers of educational and training films to release a film strip along with a motion-picture film. The combination of a motion picture, a film strip, and a manual produce

A POWERFUL TEACHING TEAM

There is a film strip on film strip use.

The Slide Film in Teaching. 48 frames, silent, black and white. A cartoon presentation showing the use of film strips in a teaching situation, emphasizing their possibilities in introducing a subject, in stressing essential details, and in review. Produced by Young America Films, Inc., 18 East 41st Street, New York 17, New York. Price: $1.00.

There is also a motion picture which shows the coordinated use of motion-picture film, film strip, and teaching manual.

Using Visual Aids in Teaching (1944). 16mm, sound, black and white, 15 minutes. This in-service teacher-training film deals with the use of a variety of teaching aids in shop instruction, but it has broader use. Made for the U.S. Office of Education. Available in many state university libraries including the Audio-visual Center, Indiana University, Bloomington, Indiana. Rental: $2.75.

Where to get film strips and projectors

The armed forces and other departments of the federal government make extensive use of film strips, and certain of these strips are broadly useful and

generally available. (See *3434 U. S. Government Films.*) Many businesses and schools are also turning out film strips which are potentially useful to governments. More and more film catalogs are including slide films as well as motion pictures. The standard reference works in the film-strip field are:

The Filmstrip Guide. Annual with supplements; H. W. Wilson Company, 950 University Avenue, New York 52, New York, $3.00.

The Educators' Guide to Free Slide Films. Educators Progress Service, Randolph, Wisconsin, $6.00.

Slide films are projected through a special kind of projector which costs much less than a motion-picture projector and can be rented for less—about $2.50 a day. These projectors are simple to operate; turning a small knob moves each "frame" or picture past the projector lens. Most slide-film projectors have adaptors for showing slides. Late-model projectors have attachments for changing the pictures automatically and even by remote control.

The use of sound-slide films requires a turntable in connection with the projector and speaker. The turntable should be large enough to take a 16-inch record (usually 33⅓ rpm). Combined units (projector, turntable, and speaker) in one carrying case are available for sale and rental ($5.00 per day). Such units housed in one case are simple to use but generally have less power than the components which can be purchased individually and operated together as separate units. Slide-film equipment is sold and rented by dealers in motion-picture equipment.

What it takes to make a film strip

Any discussion of film strips usually precipitates questions about the practicability of producing slide films. There is no denying that it can be done, but **the costs of a professional job are substantial** and the effectiveness of the finished product cannot be guaranteed.

Commercially produced film strips cost from $1,500 to $3,000 or more, depending on the color, the number of frames, the number of interior shots, the amount of research that is necessary to prepare the script, the elaborateness of the art work, and whether or not a transcription accompanies the strip.

Estimates on one 100-frame strip were as follows:

Film strip without transcription	
Script	$ 100
Photography: $5.00 for each 3¼-inch by 4-inch Speed Graphic shot. Color is twice as expensive.	500
Art work. This figure included about one dozen graphics.	600
Processing: $2.00 a frame for rephotographing on strip of film.	200
	$1,400
Additional for transcription	
Professional narration, ½ hour.	100
Preparation of transcription, including rental of studio space and equipment, making a master record, and cutting one disc.	75
Total	$1,575

Such costs obviously can be cut substantially by the use of amateur photography. Other savings are possible through the use of amateur narration and script writing. Art work is an elastic cost, but professional graphics run high; even free-lance commercial art work will cost from $3.00 to $5.00 per hour.

At best, film-strip costs are high enough so that caution should be exercised in embarking on a production program of your own. Moreover, **you should not expect to get something for nothing.** An amateur job, unless the amateur is practically a professional, is likely to be disappointing. Results will be no better than the script, the photography, and the graphics.

Film strips always suffer, perhaps unfairly, by comparison with motion pictures. They are less able to capture the living quality of motion. Usually they are simply straightforward, rather dutiful presentations of one fact after another. This step-by-step quality is not necessarily a disadvantage, particularly in a discussion situation, but it lacks the magic of motion.

Imagination applied to the medium, as elsewhere in visuals, can produce very satisfying results. More and more film-strip users are demanding and getting imaginative presentations. Sometimes the script makes all the difference; sometimes the use of graphics, cartoons, and color will lift a strip out of the ordinary. But always the success of a film strip is a function of the **accuracy of its aim.**

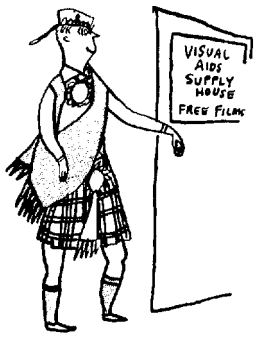
Before you rush into film-strip production, ask yourself:

For whom is the film strip intended?

For what purpose? To stimulate interest? To build prestige? To portray structure? To record achievement? To trace cause and effect?

Where and how is it to be used? What equipment is available? Is it to be used as a substitute for a speaker or as a tool? Does it introduce a subject? **Is it supposed to be a packaged program** or is it intended to reinforce a motion picture or other presentation?

Then determine whether a homemade production will serve, whether a professional job will be worth what it costs.

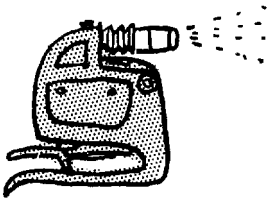


A cautious approach to film production will pay off. **The best insurance against costly mistakes is extensive experience with borrowed films and borrowed equipment.**

Opaque versus overhead projectors

Motion-picture and film-strip projectors are on the way to becoming standard equipment in many training and public information programs. However, other operators firmly grounded in visual aids are making extensive use of two other types of projectors: the **opaque** and the **overhead.** These have been tested extensively in the classroom and have been utilized by industry for sales and training programs. Both types of projectors are easy to operate; anyone can learn to use them in a short time. They come in a wide range of sizes, styles, and prices with all sorts of special gadgets and features.

THE OPAQUE PROJECTOR

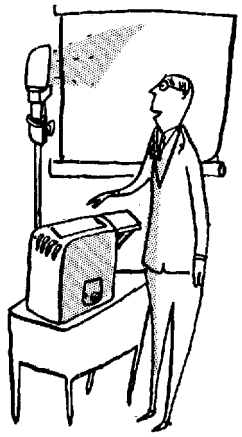


will project maps, photographs, pictures, pages of an open book—in fact any opaque object which can be slid between its generous jaws. Such projectors

generally have 6-inch by 6-inch apertures but some run as large as 8½ inches by 11 inches. They can cost upward of $250 and can be rented for $5.00 a day. Most of them are too large and heavy for comfortable portability. They are set up in the rear of the room, but the speaker needs an assistant to handle the projector or he must stand behind his audience.

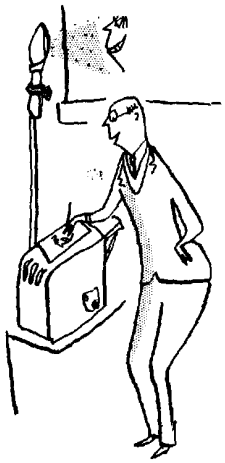
Opaque projectors have the advantage of enabling one to use materials that require no special preparation. Their lighting systems are growing more powerful, and with the so-called daylight screens, it is now possible to arrange a very satisfactory showing in a partially lighted room. Some projectors are equipped with useful pointers which direct optical arrows at will.

THE OVERHEAD PROJECTOR



is a more recent development and a most valuable training aid. It is a kind of hooded box with a reflecting mirror hoisted above it like a periscope. It is set up in front of the room and the operator faces his audience while the image is projected back over his head. Such a projector can easily be operated by the speaker himself. The advantage is obvious.

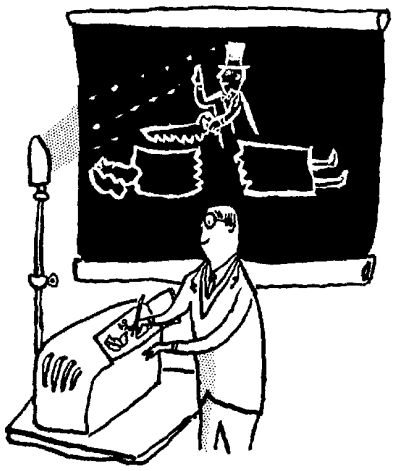
Material for these projectors, however, has to be developed on special slides made of transparent acetate or film. Like opaque projectors, the overhead projectors do not require total room darkening.



The fact that overhead projectors require the preparation of transparencies or "cells" can involve substantial expenditures of both time and money. However, it is quite possible for a confirmed user to learn to make simple diagrams, charts, outlines, or even cartoons on sheets of acetate or prepared slides. Even as he talks, the user can draw with a grease or "china marking" pencil on a continuous "white board" made by fitting rolls of acetate over the projector light.

OR

The user may have a **"black board"** for his artistic display by using black-coated acetate and a pencil or other sharp object to make the images, which cut through the black coating and appear like magic on the screen.



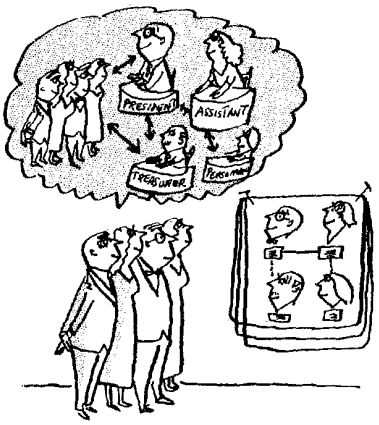
The flexibility of the overhead projector, together with the fact that it permits the operator to face his audience, has made the equipment very popular. Enterprising manufacturers have developed small models weighing around ten pounds and costing about one fourth as much as the standard machines. Naturally, these smaller projectors sacrifice something in brilliance, power, and refinement of focus, but they are a boon for traveling presentations, for small audiences, and for small training budgets.

Variety, liveliness, and build-up can be secured by the use of overlays. These are transparent layers of acetate carrying successive installments of a story which are projected one on top of another. Such overlays, singly or in groups, can make a graphic presentation appear to "grow," can give a chart new depth, can spotlight new material, or sharpen relationships. Television programs use overlays routinely.

Overlays have been used with telling effect in training courses of the federal government. One such presentation in the Bureau of Labor Statistics transformed a "cold" organization chart into a living association of individuals by use of the following sequence.

* The original transparency carried the basic departmental structure with the usual rectangles
* The first overlay caused the rectangles to be filled suddenly with a brief list of departmental functions
* The second overlay gave the name and title of the person in charge of the respective departments
* The third overlay superimposed a facial sketch of each department chief above the name and title added by the previous overlay

The trainees witnessed the successive steps unfold an organization pattern that departed from paper structure and became a living organism of personal relationships.



The preparation of projection cells generally involves reproducing graphic materials by photography. This is frequently done by professionals. The costs are not prohibitive and visual-aids equipment concerns are prepared to give fast service. Homemade charts, tables, or outlines on sheets of acetate can be prepared in advance. There are patented prepared cells on which typewritten materials can be developed. These *Radio Mats* are available through photographic supply houses in white, amber, and green and cost $1.50 for 50 cells.

Strips of acetate, either black or white, can also be inserted into prefabricated cardboard mountings to make slides. Again a china marking pencil will produce good results. Aniline dyes can be swabbed over transparencies for colorful effect. Fototype can be used for titles. Graphics prepared for any other purpose can be rephotographed on transparencies at modest cost.

The use of opaque and overhead projectors is demonstrated in the following films:

The Opaque Projector, Its Purpose and Use. 16mm, sound, black and white, 6 minutes. How to prepare and use the projector. For teachers. Iowa State University, Ames. Rental: $1.25.

The Overhead Projector. 16mm, sound, black and white. Uses of overhead projectors and methods of producing transparencies to be used with them. For teacher-training or industrial-training purposes. Bureau of Audio-Visual Instruction, University of Iowa, Iowa City. Rental: $2.50.

Showmanship helps: engineering a film showing

Careful preparation makes for a distraction-free performance. This maxim holds for any and all visual aids. Optimum use of any projected visual (or, for that matter, of charts) is compounded of one part technical competence in handling the equipment and one part expertness in securing audience participation. Together these add up to showmanship in the best sense.

There are visuals to help achieve such showmanship:

Facts about Projection (1950). 16mm, sound, black and white, 11 minutes. Stresses proper preparation in advance of the showing of films, the need for setting up the projector and testing it before the viewers arrive, and other suggestions for better projection. Operational routines for starting and ending the showing are included. International Film Bureau, 57 East Jackson Boulevard, Chicago, Illinois. Rental: $2.50.

Facts About Film (1948). 16mm, sound, black and white, 10 minutes. Points out the physical qualities of 16mm film which make it susceptible to damage. Demonstrates the ways it may be protected. International Film Bureau. Rental: $2.50.

Cuthbert's Last Stand. Film strip with script. Satirizes incorrect use of projection equipment. Sarra, Inc., 16 East Ontario Street, Chicago, Illinois. Purchase price: $1.00.

How to Operate Your SVE Instructor. Slide film. Society for Visual Education, 1345 West Diversey, Chicago, Illinois. Free.

Operation and Care of the Bell and Howell Sound Projector. 16mm, sound, black and white, 21 minutes. International Film Bureau. Rental: $3.75.

Film Tactics. 16mm, sound, black and white, 23 minutes. Spells out every step in the process of using motion pictures in training programs. Audio Visual Center, Indiana University, Bloomington. Rental: $2.75.

For further suggestions on how to use films in a discussion see:

Film Utilization, by J. Roby Kidd and Carter B. Storr. Sponsored by the Canadian Association for Adult Education, 143 Bloor Street West, Toronto, Canada, and the Educational Film Library Association, 1600 Broadway, New York, New York, $1.00.

How to Conduct a Community Film Forum, by Robert R. Schacht. Film Council of America, 600 Davis Street, Evanston, Illinois, 15¢.

Preview the film: this is a must. Know what's in it and what it's good for. Never trust implicitly any written description. Figure out how to tie it into your program. Don't be discouraged if it's not a perfect fit. Even a film that is only partially suitable can be useful if your audience is in on its defects in advance.

MAKE
YOUR AUDIENCE
COMFORTABLE

Arrange chairs so that everyone has an unobstructed view of the screen. Chairs should not be closer than 2½ times nor farther than 6 times the width of the screen. Avoid wide angles which distort the picture.

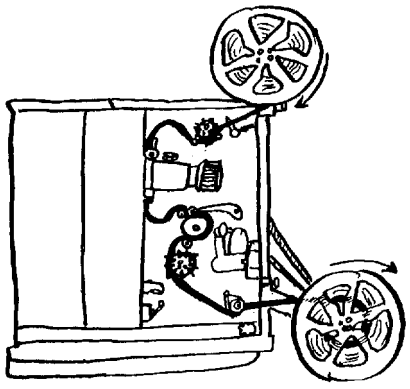
Provide ventilation; this may be a real problem in a total blackout. Provide ashtrays, if the fire ordinance permits smoking. (It probably won't.)

Protect wiring to prevent the audience from tripping and the equipment from being damaged. A simple twist around a table leg is good insurance.

HAVE
EVERYTHING
SET TO GO

Place the screen high enough so that the heads of your audience won't obstruct the line projection. Be sure you have a long enough heavy-duty extension cord. Find out whether the current is alternating or direct. Most projectors operate on alternating current, and a transformer is necessary to use them with direct current.

Set up the projector. A rolling projector stand is an invaluable accessory. Check operation. Put it through its paces manually before you thread the machine and turn the switch; "chewed" film can cost you real money.



Thread the film following the guide lines on the projector and/or the instruction manual.

Have access to spare projection and excitor (sound) lamps and know how to change them. Lamps usually "blow" in something like twenty-five hours. If you own the projector, it will pay to keep track of the hours of use on a small label stuck to the machine.

For the want of a spare lamp, the attention of your audience may be lost and your otherwise good preparation largely dissipated. Few experiences are so frustrating as having to explain to an accommodating audience that a lamp has blown and that there is apparently no spare.

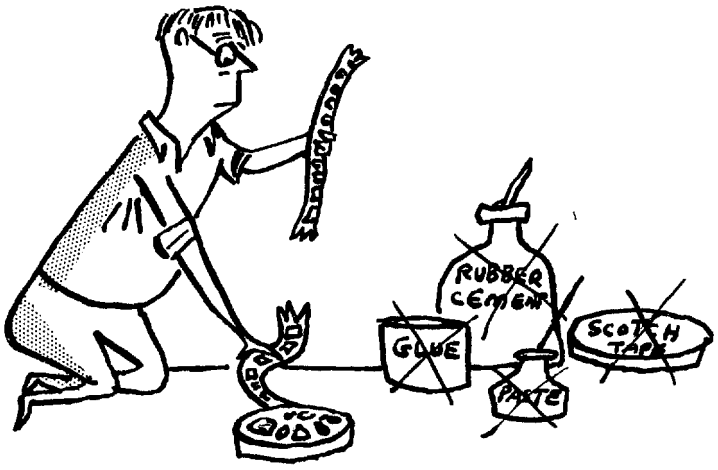
Place the amplifier at the front of the room, preferably at screen height; the acoustics are better that way. Darken the room as completely as possible, or at least darken the screen.

Start the projector and throw the light switch. Focus the picture. Have the image fill the entire screen if possible. Adjust the sound volume. Switch off both until the showing begins. Remember that the sound amplifier takes time to warm up.

Introduce the film to your audience. Tell your audience what it is about, who sponsored it, why it is being shown, and what to watch for. Now darken the room, throw the switch and stand by.

Check the machine's operation from time to time. The operator should **always** be close by. When in doubt as to whether it is running properly, turn the projector off and try again. You will soon develop an educated ear for trouble. Keep a clear conscience by following maintenance suggestions to the letter.

Be sure that there is always a loop of film on both sides of the projector aperture. This is good insurance against film damage. If the film breaks—heaven forbid—don't try to mend it before continuing the presentation. Simply rethread the projector and hold the new end on the lead reel until the film stops slipping. A paper clip used with discretion is often useful in holding the two ends together after rethreading the machine. Don't attempt to use scotch tape. It will ruin the film.



WATCH YOUR AUDIENCE REACTION AND MAKE THE MOST OF IT

Don't be afraid to repeat with or without sound—you will be surprised how much more you get the second time.

Motion pictures, like any other visual, are or should be used for a purpose. When you are through, it is good common sense to check to see that this purpose has been accomplished.

Whether your goal is to **spark interest, convey information, broaden understanding** or **motivate action,** check your own and your visual's performance. You'll do better the next time and you'll have a surer "feel" as to what kind of a visual works best, when, and whether it is worth what it costs.

The language of visual aids

It should never be forgotten that every tangible evidence of a program or organization is a potential visual aid. Pulling power, directness, attractiveness, all depend on the knowing use of visual elements.

These visual elements are always present. The important thing is to learn to use them with maximum effect—to use them as visual aids to communication rather

than as gadgets. To serve you well they must become **a kind of language.** Give them a chance and this is exactly what will happen.